COAL AGE

The Weekly Journal of the Coal and Coke Industries

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Rail-Rate Increases

REHABILITATION of the railroads may be said to have just begun with the increase in rates of one and a half billion dollars, more than half of which goes to labor. The Interstate Commerce Commission in announcing its decision, the purport and extent of which was largely discounted in advance, comments on the fact that shippers' testimony regarding the proposed rate changes was more generally directed toward methods of application than on amounts of increase. This certainly has been the attitude of the coal industry.

The commission finds that shippers are far from unanimous in their views on this subject and that there are those who desire absolute preservation of differentials, those who favor straight percentage increases and finally those who advocate a percentage increase with a maximum. After discussing these various methods the commission concludes that with certain exceptions general percentage increases "must be considered for present purposes the most practicable." This conclusion is stated to be without prejudice to any subsequent finding in individual situations.

Coal, among the commodities accorded separate discussion, will have special and separate treatment in the application of the rate increases. The commission says that an effort should be made promptly to devise rates in each group that will yield, as nearly as practicable, the same revenues in the aggregate that would be afforded by the straight percentage increases. In other words, the commission has left to the coal and railroad men the task of working out the details of coal-rate increases and asks only that when completed the result give the carriers the specified total percentage advance. Between now and Sept. 1, when it is desired that the new rates become effective, there is time for agreement to be reached on but a few important base rates.

Common Sense Versus Panic

ON JULY 14 the manufacturers in New York State, outside of New York City, banded together in a group called the "Associated Industries of New York, Inc.," met in Albany to discuss the coal situation. According to reports they assembled with the idea that it was time to urge the Government to step in and before the meeting was well under way it was evident that the belief prevailed that a Fuel Administrator should be appointed, if not for the United States at least for the State of New York. New England had such an officer and perhaps was getting more than its share of the coal.

Before the close of the day common sense got the better of panic and the following resolutions were adopted. They are given here in full because they are so much better than might have been expected from a group of consumers who, in part at least, are short of coal and are paying high prices with no positive relief in sight. The men who adopted these resolutions did so in the same spirit that a real American crowd forms an orderly line before the ticket window, each awaiting his turn, not quite ceretain but that the seats will all be taken by the time he gets there.

Resolutions adopted by the Associated Industries of New York, Inc.:

"Whereas it is the consensus of opinion of this meeting that while there is a general shortage of bituminous coal, there is no reason for a panic, though such panic seems possible through an unnecessary fear of a drastic shortage of bituminous coal next winter; and

"Whereas it is apparent that the present stringency in the bituminous-coal market is not due to any omission of effort on the part of coal operators or railroad operators but that such stringency is due to lack of operating equipment caused primarily by excessive and hard war-time use of such equipment without necessary upkeep and repairs; and

"Whereas it is further apparent that present stringent conditions are due to a woful lack of co-operation on the part of the employees of railroads through so-called outlaw strikes and otherwise; therefore be it

"Resolved that it be the sense of this meeting that we urge our respective communities to co-operate with the railroads in their efforts to obtain the necessary funds and labor to rehabilitate their properties and to further co-operate by the prompt loading and unloading of cars and by the efficient use of their present equipment to assist in delivering more bituminous coal to consumers."

Federal Trade Commission to the Rescue

WHAT a consolation to the National Coal Association to be able to turn to "authentic governmental figures" to illustrate to the public "the slender margin of profit per ton" realized by the bituminous coal industry! In a press release to the newspapers for last Sunday, full advantage is taken of the figures of costs and sales realizations on bituminous coal for April issued by the Federal Trade Commission (*Coal Age*, July 29, page 258) in showing that the operators are not the ones who are gouging the public with high prices for coal. This story, prepared by Mr. Pratt of the National Association, is a fair statement of the facts, well written, and should convince the skeptical that the real source of high prices is not at the mines—that the producers are not the real offenders. The story would have fallen flat, could not have been written, in fact, without the Federal Trade Commission figures as a basis.

All is grist that comes to the mill of the writer of publicity, of course, and Mr. Pratt is fully justified in his use of these figures, but one cannot help marveling at his audacity. As far as the National Coal Association is concerned, the monthly cost reports to the Federal Trade Commission have ceased to be. Has

not Justice Bailey of the District of Columbia Supreme Court enjoined the commission from requiring these reports and on the plea of the coal operators? Has not the operators' association spent much good money in lawyers' fees to compel the commission to cease its activities in this direction? The plain intent of the National Coal Association so far has been to prevent and discourage operators from filing these monthly reports, and in this it has been fairly successful—the number reporting for April was 812 compared with 1,589 for January of this year. These same reports are proving of inestimable value to the operators, for, as we have said before, they have nothing to hide and everything to gain in making public this information.

The National Coal Association started the suit against the Federal Trade Commission to settle once for all the controverted question as to whether the commission has the legal right to *compel* the submission of data on costs, or whether, having the right, it could designate absolutely the form in which the producer should keep his books. So far as known, the association has not advised its membership that they should proceed to file reports voluntarily. No official encouragement has been given the Trade Commission in this work, the results of which are palpably of so much interest and value to the association.

At least 812 coal producers have no objection to reporting these figures to the Federal Government and there is a marked belief on the part of many influential coal operators that the effort to cut off the publication of these data was and is ill-advised. We are staunch advocates of the principle of voluntary submission of data to the Government. We believe that sufficient producers are or can be educated to the point of regularly making these and other valuable reports. It seems time for the National Coal Association to remove the wet blanket it has thrown on the efforts of the Trade Commission to compile and publish these data and to come out with a statement to its membership urging them to make *voluntary* returns of monthly costs.

What was avowedly a friendly suit to test the powers of the Trade Commission should be continued in that spirit. Purely selfish motives should impel the National Coal Association to urge on operators the necessity of making a better showing in the May cost statement than 812 reports out of the thousands who are in the business of producing coal.

Oil the Coveted

SAGHALIN, an island north of Japan, the northern half of which is Russian territory, has been seized by Japan. The area is described as barren, cold, and now but a location for a convict colony. The United States is openly opposed to the forceful acquisition by Japan of this Russian territory and it is reported that Great Britain also is concerned and watching the negotiations with unconcealed interest.

Perhaps the real reason for activity in this diplomatic game is that this island is reported by geologists as a very likely source of petroleum. Petroleum is a matter of world-wide concern today and nations are developing policies looking to the protection of supplies already developed and to the acquisition of control of new productive areas. If Saghalin is a potential source of oil in quantity, the diplomatic fight for its control has only begun.

Practical Men

OUT of his own experience, the practical man gathers his ideas. If his experience is narrow, he is nevertheless a "practical" man. A practical mining man may never have combated a mine fire, worked after a mine explosion, handled machinery or operated an up-to-date mine. Nevertheless he is still a practical mining man. He has practiced mining as mining is practiced where he got his experience.

Some things he has learned, things which can only thus be attained, but he may have much knowledge or little, according to conditions surrounding his experience. When a man asserts he is a practical mining man he should explain at what he is practical—at running a mine without gas, little water, no machinery or at a plant where all manner of up-to-date appliances are in use and every class of difficulty is to be met.

An all-round man is he who has ripened his practice in the sun of other men's diverse experience, whose grasp is lengthened by his ability to stand on the shoulders of others. The experience of one man is a sorry basis for the work of the modern world. Fortunately, no man is wholly practical. Every man today has drawn more or less from other men's experience and added it to his own. His own labors may mean as much to him as the labors of others, but the successful man is willing to accept, without jealousy, the experience of others and is not so profoundly immersed in his egotism as not to be anxious to avail himself of the labors of workers in his own or kindred fields.

Water Power Helps Coal Shortage

FIGURES recently published by the U. S. Geological Survey on power produced by central power stations and public utilities for the first four months of this year show the help water power has been to the country this spring. The combined output of power from all sources was approximately the same in April as in February and March of 1920, the 3-month period showing a material drop compared with the same period of 1919. Power developed from water this year, however, recorded a gain of 25 per cent from February to April, figured on the basis of average daily production. Power obtained by burning coal, and to a smaller extent oil and gas, decreased from 2,300 million kilowatt hours in the month of February to 2,100 millions in April.

It is particularly significant also that the mean daily output of power for the first four months of 1920 was 16 per cent greater than in the corresponding period of 1919—121.2 million kilowatt hours this year against 104.08 in 1919. A portion of this unusual load on the public utility plants is no doubt due to the transfer of consumers from isolated plants to central power, but undoubtedly largely the result of actual greater demand for power from industrial consumers and for transportation. The increase in power from fuel has been about 23 per cent, showing that, as is usually the case, coal is required to carry the peak load.

It is interesting to apply this slight but significant measure of increased demand for coal—coal is power—into terms of annual production of bituminous coal. The output in 1919 is estimated at 450,000,000 net tons. An increase of 16 per cent indicates a requirement for 1920 of about 520,000,000 tons—somewhat below the mark set by most observers.

Freight Traffic is Greater Than Last Year's

An increase of about 3 per cent in freight traffic on the railroads of the country during the first two weeks of July, as compared with the same period in 1919, has been reported by the Commission on Car Service of the American Railway Association. During July of this year 1,597,295 cars were loaded, according to the report, against 1,553,071 for the same two weeks of 1919 and 1,769,242 for the similar period of 1918.

Sees Crisis for Gas Companies

In a statement issued July 25 G. B. Cortelyou, president of the American Gas Association, said: "The emergency which faces artificial gas companies is immediate and far reaching. It embraces the entire gas industry. Economic conditions, many of them of worldwide extent and influence, affecting the supply of coal, oil and other essential materials required in the manufacture of gas, of labor and of the funds needed to maintain and develop our properties are not bogies invented by industry to secure preferential treatment. They are the facts."

New Barge Canal Will Ease Freight Congestion

A new canal barge line between Jersey City and Buffalo, by way of the Erie Canal, has been opened by which freight will be hauled between Jersey City, New York, Oswego, Buffalo and way points at a rate which, it is said, is less than is charged for railroad freight between Jersey City and Buffalo.

New York Customs Receipts Smash All Records

Collector of the Port Newton announces that receipts of the New York Custom House for the year ended June 30 totaled $230,083,885, as compared with $117,854,252 for the preceding year, and approximately $5,000,000 more than ever before collected in a year in the history of the Port of New York.

Railroad and Fuel Crises Curtail Steel Output

In its weekly iron market summary as of July 29 the *Iron Age* says: "Barring unexpected relief, the railroad situation in the Pittsburgh district will soon force steel works there to further curtailment of production. At Chicago also the week's developments have been unfavorable, the strike at Illinois coal mines bringing on a new fuel crisis. Five additional blast furnaces were banked there, so that the Steel Corporation has only 14 furnaces in blast out of 29 in the Chicago district. Generally speaking, new inquiry for finished products has fallen off, rails and track supplies, cold rolled steel, wire and pipe being exceptions. In the Middle West the railroads and implement manufacturers in particular are pressing for deliveries on contracts."

Coal Company Sues City of Scranton for $1,000,000

The People's Coal Co., owners of the Oxford Mine, Scranton, Pa., has entered suit against the city to recover $1,000,000 damage. The action was taken as a result of the closing of the mine two months ago by Mayor Connell and the police under the provisions of the Davis Mine-Cave Law. This was due to alleged destructive mining methods which resulted in the cave-in of streets and the tumbling down of many business places and dwellings in West Scranton.

NEWS BRIEFS

Terse Items Chronicling Events of Interest to the Industry

U. S. Steel Earnings $43,155,705 During Second Quarter

Despite railroad congestion, which reached its most acute state in June, net earnings of the U. S. Steel Corporation for the quarter ended June 30 were $43,155,705. The net earnings in the first quarter of 1920 were $42,089,019, and in the second quarter of 1919 they were $34,331,301. The results were the largest since the third quarter of 1918.

International Commerce Body Studies World Fuel Situation

The International Chamber of Commerce, composed of delegates from Belgium, Great Britain, France, Italy and the United States, recently held its first meeting in Paris. As the result of a discussion of the world's fuel stock a resolution was passed urging utilization of hydro-electric power, development of measures for the scientific and economical use of mineral fuel, and development to the utmost of research in the extraction of coal and oil resources of the world.

Coal Prices Soar in Illinois

Coal prices at Illinois mines have taken a jump of $1.30 to $3.30 a ton at mines and bidders are still running the figure up. President Farrington of the Illinois United Mine Workers asserts that twenty-two mines have signed agreements to pay shift men $2 more a day.

Corporation to Lend Funds for Equipment of Railroads

A corporation designed to furnish funds to railroads which now are in need of new equipment is being formed by S. Davies Warfield, president of the National Association of Owners of Railroad Securities, and is expected to be launched soon. Mr. Warfield has received assurances that securities of the proposed equipment trust corporation up to upproximately $25,000,000 will be bought by large insurance companies.

Says Natural Gas Will Last Only 25 Years

Natural gas will last only twenty-five years longer and not that long unless the supply is conserved, was the opinion expressed by Samuel S. Wyer, of the United States Bureau of Mines, at a natural gas conservation conference held under the direction of the Pennsylvania Public Service Commission at Pittsburgh, July 28.

Great Britain and France Form Oil Alliance

According to information from an authoritative source, Great Britain and France have concluded an agreement in connection with oil supplies designed to secure international co-operation and to eliminate competition which might give rise to friction between them.

Dr. Eaton Would Abolish Unions

At a recent luncheon of the New York Rotary Club in the Hotel McAlpin, the Rev. Dr. Charles A. Eaton, associate editor of *Leslie's Weekly*, told the members that he advocated the open shop and the abolition of unions, but that employers must first learn to do voluntarily the things that unions now force them to do. He recommended the education of all workers, particularly immigrants, in "the idealism that is the soul of America."

Cannot Make Enough Gasoline To Supply Demand

There is not enough gasoline to meet the needs of the public, notwithstanding that the Far West has never had so much gasoline as this year. Producing wells in this country and Mexico are unable to meet the growing demand.

A. G. Gutheim

Member of the Commission on Car Service, American Railroad Association

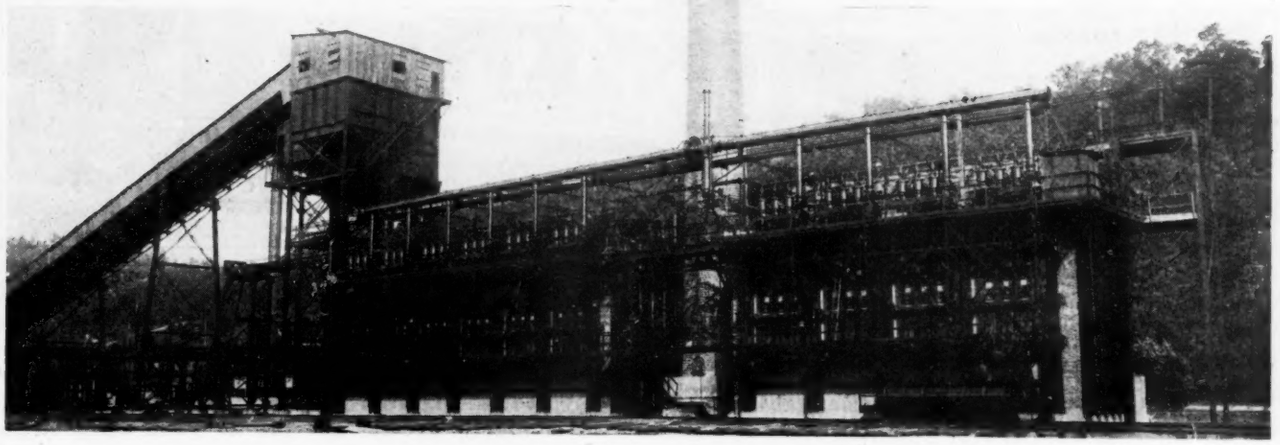
DURING the time that men in the military service were distinguishing themselves for courage and resource in handling the problems met at the front, equally important achievements were being scored by some of the men handling problems of production and distribution at home. When the war opened A. G. Gutheim was one of the legal examiners of the Interstate Commerce Commission. His special knowledge of car service led to his being assigned overnight to the operating branch of the Railroad Administration. Throughout the war he handled matters pertaining to car supply with such ability as to signally distinguish himself. Today he is regarded as one of the country's authorities on car service. It was he who was called upon by Daniel Willard, president of the Baltimore & Ohio Railroad Co., to present the problem of car service at the recent important hearings before the Interstate Commerce Commission in the case known as Ex-parte 75.

Mr. Gutheim was born in Cambridge, Mass., in 1878. His early education was obtained in the schools of that city, where he completed the high school course. His legal training was obtained at the Boston Y.M.C.A. Law School. He was engaged with the Fitchburg and the Boston & Maine railroads from 1896 to 1906. In the latter year he went to Washington as a special agent for the Bureau of Corporations. Two years later he entered the service of the Interstate Commerce Commission as an examiner of accounts. He served as special agent and finally became an attorney examiner for the commission.

At the outbreak of the war Mr. Gutheim was assigned to car-service work with the Interstate Commerce Commission, but was loaned to the Railroad Administration almost immediately after its formation. A considerable portion of his time was spent on coal-car questions. On March 1, 1919, he accepted an appointment on the Commission on Car Service of the American Railroad Association. In his new connection he is called upon to provide relief in all matters where difficulties arise in car supply.

Making the Smokiest Coal Smokeless While Saving Byproducts*

By George Esherick, Jr.
New York, N. Y.



Many Factors Make It Desirable to Cease Burning Raw Bituminous Coal and to Substitute Smokeless Fuels of the Anthracite Type—The Smith Process of Low-Temperature Carbonization Renders This Possible

EVERY civilized nation is devoting attention today to the problem of conserving its coal supply. The proposition presented is really one of utilizing coal more economically than heretofore. This is a problem not altogether new, and a fair degree of progress has been made toward its solution. Many improvements have been made in the methods of burning coal and in the ways and means employed in utilizing the heat energy derived therefrom. But by far the greatest progress has resulted from radically modifying the raw material itself before using it for fuel.

Along this line the production of coal and water gas has been developed to a worldwide industry, the trend being always toward a more complete gasification of the fuel. The final coke residue is, of course, a by-product of the process. The production of coke for metallurgical purposes meanwhile has progressed as an independent industry in which the main product sought is coke, the byproducts being largely wasted.

Production of coke has always been controlled by the demands of the steel industry, and this fuel has not come into general use either industrially or for domestic heating. One reason for this has been its high price, although the increasing market for coal-tar products has in recent years served to lower production cost. Another reason is that good coke can be made only from certain kinds of bituminous coal, and this limits to some extent the areas in which coke is available.

But the principal reason that coke has remained essentially a metallurgical fuel lies in the fact that it is not well suited for domestic heating, or for railroad use, or for industrial operations generally. Anthracite coal more nearly meets the demand for a smokeless, solid fuel of high heat value, but the supply of this coal is limited in quantity and in geographic distribution.

The burning of raw bituminous coal is uneconomical, as the market for coal-tar products has made the volatile portion more valuable for other purposes than for fuel. The coke industry has taken advantage of the increased market for byproducts, but has not developed a fuel which is satisfactory for domestic uses. In the burning of raw bituminous coal the volatile constituents are not even completely consumed, a considerable portion escaping as smoke. This is not only a waste of fuel but a nuisance, and many cities have already adopted smoke ordinances which prevent the use of bituminous coal, and these enactments have necessarily increased the demand for a smokeless fuel of the anthracite type.

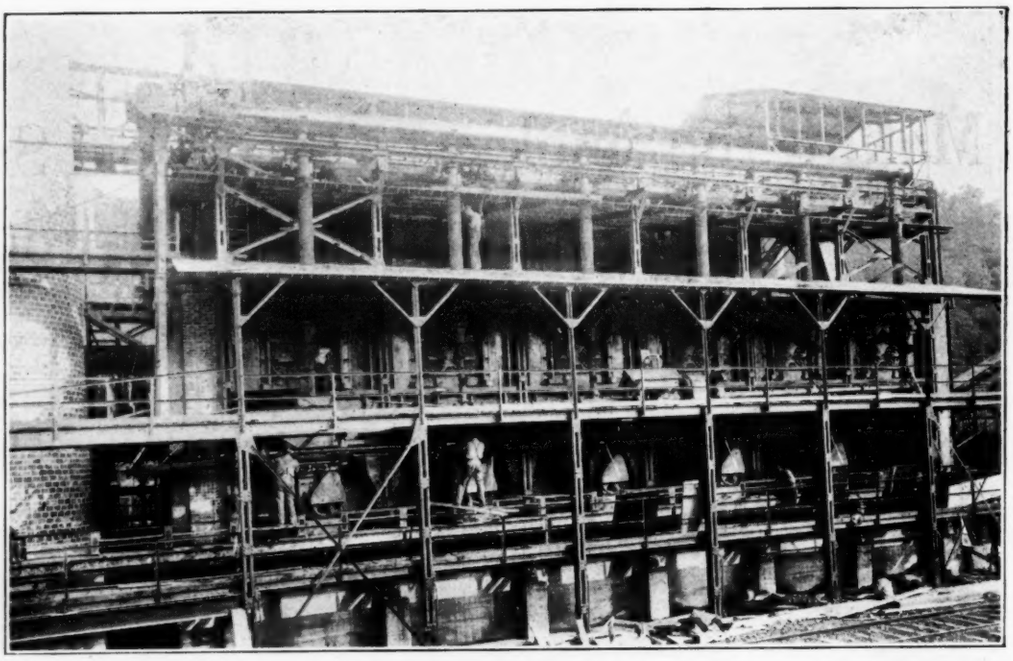
The conversion of bituminous coal in commercial quantities into a fuel resembling anthracite is an attractive problem from many angles. The requirements of such a fuel are primarily that it be smokeless, easily burned, but not too expensive. It should be as uniform in size as possible, have a reasonably high heat value, be easy to handle and safe to store.

The Smith process aims to accomplish the needs outlined by producing a smokeless fuel as good as or better in quality than anthracite, and one that can be sold at a price that will insure its general use. The name "carbocoal" has been given to the fuel secured.

*First half of a paper presented before the Kentucky Mining Institute, June 4, 1920, and entitled "The Low-Temperature Carbonization of Coal and the Future of Bituminous Coal."

Primary Retorts

This shows the discharge end of the retorts at the plant at Clinchfield, Va., receiving the finishing touches just prior to starting operation.



The method of its production is briefly as follows: Raw coal as it comes from the mine is crushed and fed continuously into low-temperature horizontal retorts by means of paddles. The volatile products of carbonization, i.e., the tar, gas and ammoniacal liquor, are treated essentially as in coke-oven practice. The semi-coke which is continuously discharged from each retort is quite different from ordinary coke. It is much softer, carries 8 to 10 per cent of volatile matter and burns readily. It could be used directly in a power plant, either as fuel under the boilers or in gas producers, but is not in condition to market for general use.

In the net step of the process this semi-coke, or semi-carbocoal, is ground, mixed with pitch, fluxed and passed through a briquet press. The raw briquets are then carried to inclined retorts and distilled again at a temperature of about 1,800 deg. F. for six hours. They are then dumped and quenched. The tar, gas and ammoniacal liquor from this high-temperature carbonization are collected and treated along with similar products from the low-temperature carbonization.

Why More Fuel and More Tar Is Obtained

Yields of carbocoal and the various byproducts obtained depend largely on the kind of coal used. Obviously, a coal of high volatile content will, in general, give a high yield of byproducts. If we take a coal of the following typical analysis: Moisture, 3 per cent; volatile matter, 35 per cent; fixed carbon, 55 per cent; ash, 7 per cent, the yields per ton of coal carbonized will be about as follows: Carbocoal, 1,400 lb.; tar, 30 gal.; gas, 9,000 cu.ft.; ammonium sulphate, 20 lb.; light oil from gas, 2 gal.

The yield of carbocoal is a little higher than the yield of ordinary coke from the same coal. This is because carbocoal has a slightly higher volatile content than coke, while about half the pitch used as a binder remains as coke in the finished briquet. The yield of tar is nearly four times that obtained in ordinary byproduct coke-oven practice. This results chiefly from the low temperature employed in the primary carbonization.

For the same reason the composition of the tar differs considerably from that of the similar product obtained in an oven. It runs higher in its content of valuable tar acids, with more cresols and less phenol. Furthermore it contains no naphthalene.

The ammonium sulphate yield is about the same as in byproduct coke-oven practice. As the yield of solid fuel is slightly greater and the tar yield much larger than in coke-oven practice, it follows that the amount of gas evolved must be less. There is, however, somewhat more than enough gas to heat both the low- and the high-temperature retorts.

Ammonium sulphate finds a ready sale as a fertilizer, the present market price being about 7c. per pound. The light oil from the gas is combined with the light oil from the tar distillation. This fraction is then washed with sulphuric acid and worked up into motor spirit, the present price being a little higher than that of gasoline.

Distillation of the tar yields about 20 gal. of salable oils per ton of coal carbonized. These oils have a high market value. The tar-acid content is approximately 40 per cent and for this reason the oils are highly desirable for making disinfectants, sheep dips, wood preservatives, flotation oils, etc. The manufacture of pure cresylic acid from such an oil is an easy step. This acid is now being imported into this country at a price of over a dollar a gallon. The pitch which results from the tar distillation is returned to the process, and is approximately the amount required for briquetting.

Carbocoal Almost as Dense as Coal

The main product of the Smith process is, of course, the carbocoal, which represents about 70 per cent of the weight of the material treated. This fuel as it comes from the high-temperature retorts is in the form of hard briquets of a density much greater than that of ordinary coke and only slightly less than that of coal.

As a domestic fuel carbocoal compares favorably with anthracite. It has a heat value of about 13,000 B.t.u. (assuming a coal with 7 per cent of ash, as above). Being of uniform size and quality, this product burns evenly in the fire bed, leaving under proper firing conditions a clean, light ash. In all cases the tendency

to clinker is much less than with the coal from which the carbocoal is made. There is no difficulty in banking the fire and it responds readily to draft control.

Carbocoal has been tested under stationary boilers with excellent results. In one test at the plant of the Fosdick Machine Tool Works, Cincinnati, Ohio, carbocoal gave an evaporative efficiency of 58 per cent and a combustion rate of 23 lb. per square foot of grate surface. This was on a 103 hp. horizontal return-tubular boiler operating at 116 per cent of rated capacity. In a similar test made with coal on the same boiler and under like conditions an evaporative efficiency of 45.2 per cent was found, with a combustion rate of 22.7 lb. per square foot of grate area, under a load of 97 per cent of boiler rating. During the carbocoal test there was no smoke from the stack, while during the coal test, as is usual, a large volume of smoke was discharged.

The higher efficiency of the carbocoal does not lie in a greater B.t.u. value, as the heat content of carbocoal is a little less than that of a high-volatile coal. It arises from the fact that practically all the carbon in the carbocoal is burned, there being no smoke and little combustible in the ash. With coal, on the other hand, smoke losses have to be added to the loss of that appreciable amount of carbon that remains in the ash.

Other tests comparing carbocoal with bituminous fuel have been carried out with the same general results. The following figures were obtained in a 24-hour test comparing carbocoal with run of mine from the Pocahontas region:

TABLE I. COMPARISON OF CARBOCOAL WITH POCAHONTAS MINE-RUN

	Carbocoal	Pocahontas
Pounds of water fed per pound of fuel fired	8.15	8.66
Steam pressure, pounds per square inch	282..2	300.7
Pounds of water fed to boiler per hour	11,616	12,058
Equivalent evaporation from and at 212 deg. F. per pound of fuel fired	9.09	9.87
Efficiency based on coal fired	65.35	65.39
Efficiency based on combustible burned	69.55	68.11
Smoke density by Ringelmann smoke chart	0	41.6

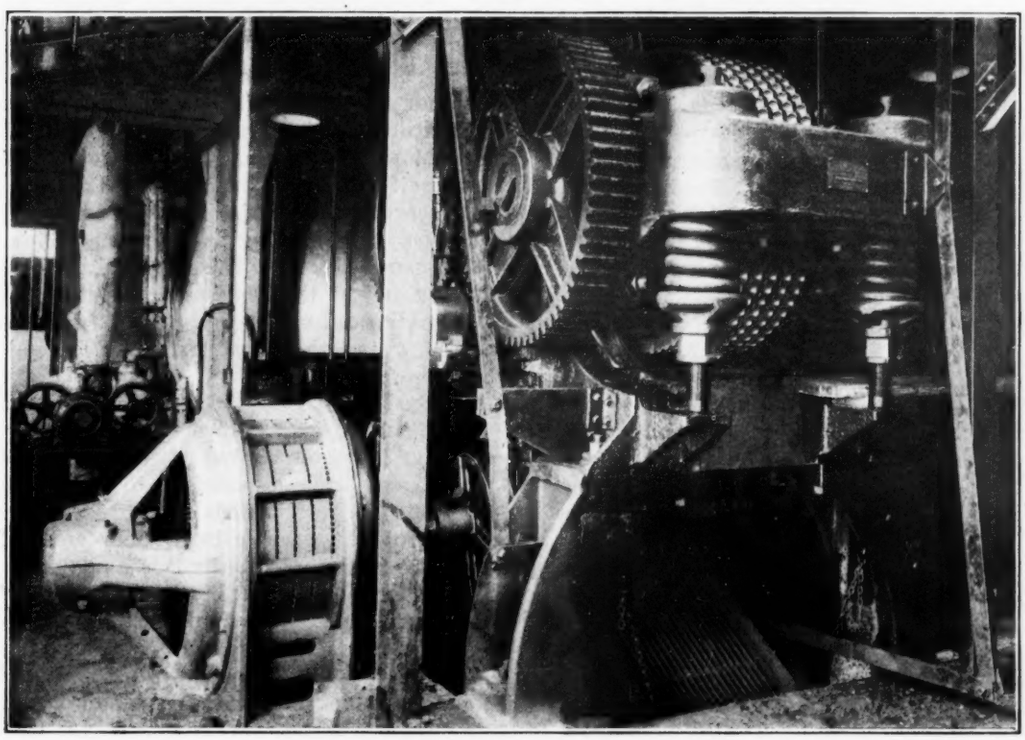
Carbocoal has been used experimentally in foundry cupolas with entirely satisfactory results. Its suitability for blast-furnace use as compared with coke also has been pointed out. It occupies only two-thirds as much space as coke, has a porosity in excess of 40 per cent, while its crushing strength has been proved by numerous tests to be equal to or greater than that of the ordinary grades of metallurgical coke.

Owing to the tonnage requirements of an actual blast-furnace test, it will be impossible to conduct such trials until the completion of the Clinchfield plant, but there is every reason to believe that carbocoal will soon be demonstrated to be an entirely satisfactory fuel for both cupola and blast-furnace purposes. Being able to produce a metallurgical fuel from a non-coking coal is particularly advantageous in the West, where high grades of coke are not locally available.

Pennsylvania Workmen's Compensation Act Is Interpreted

UNDER the Pennsylvania Workmen's Compensation Act it is not essential to recovery of an award that an injury resulting in death of a mine employee, or other employee, arise out of or be due to his particular employment; it is sufficient that the injury occur in the course of the employment. If death comes, however, during the course of employment in an ordinary way, natural to the progress of a disease with which one is afflicted, and with which he was smitten before the accident, there can be no recovery.

But if the death is brought about by an injury due to some mishap or accident happening during the course of the employment, the fact that deceased had a chronic ailment which rendered him more susceptible to such injury than an ordinary person would be, will not defeat the right to compensation. (*Pennsylvania Supreme Court, Clark vs. Lehigh Valley Coal Co., 107 Atlantic Reporter, 858.*)



Briquetting Press

Here the pulverized semi-coke mixed with a binder is pressed into briquets ready for "baking."

What the Deep Vein Coal Co. Has Learned About the Ship-by-Truck Movement

Five-Ton Motor Trucks Are Able to Haul Coal for Short Distances Cheaper Than Can the Railroads and Can Deliver It to the Customer's Cellar for Far Less Than the Combined Rail and Wagon Charge

By Donald Baker
Wilkinsburg, Pa.

QUICK to see the possibilities of the motor truck as an effective and economical means of transportation over short hauls, the Middle West today, perhaps, leads all other producing districts in the movement of coal by this method. Coal-producing firms around Terre Haute, Ind., have to a large extent forsaken the idea that unless railroad cars are available the mines cannot operate, and they are now advocates of the motor truck.

To stand on Wabash Ave., the chief business thoroughfare of this bustling city, is to gain a keener appreciation of what the "ship-by-truck" movement means to the coal operator. Trucks of all kinds with their burdens from the underground pass in an almost endless stream during the day. From the Ford with a remodeled body and a capacity of possibly a single ton to machines with 5- and 6-ton bodies equipped with sideboards that give them a capacity of from 6 to 8 tons, the parade moves past.

Overlooking the advantages of keeping the mine running when cars are scarce, of the fair prices which are often obtainable only during a shortage, of the return loads of mine material that can be carried and of the ability to use the trucks when some other kind of trucking is needed, a truck will pay for itself in one year and will make a $30,000 profit in six years where the haul is about five miles each way and the grades are not prohibitory.

The casual observer wonders where all the coal is coming from and what is its destination. One thing is certain: the Middle Western coal operators have learned something about the truck that is not generally appreciated elsewhere, and in so doing have made Terre Haute practically independent of the motive power of the railroads. Let us select one of the coal concerns of this city and see what it individually has learned about comparative costs of transporting coal by truck and by the better known method—by rail.

Coal Company Trucks 10,000 Tons in Month

Foremost among the coal producers of Terre Haute who are utilizing motor trucks to combat the car shortage is the Deep Vein Coal Co. During the month of June, just past, this firm moved 10,000 tons of coal over an average distance of five miles, making, of course, a total distance traversed by each truck of ten miles per trip.

The mine owned by the Deep Vein Company is not a large one, having an average daily output of 1,000 tons when business demands are such as to require the production of this amount of coal. It thus can be seen that this firm is actually moving over one-third of the mine output on the highways.

The amount of coal moved during the month mentioned is larger by far than that similarly handled in any previous month on record and presages a tremendous increase for 1920 as against previous years. As will be shown later, this is to be expected, for the company knows the true worth of the motor truck. The Deep Vein people have been experimenting with this means of transportation for the last three years.

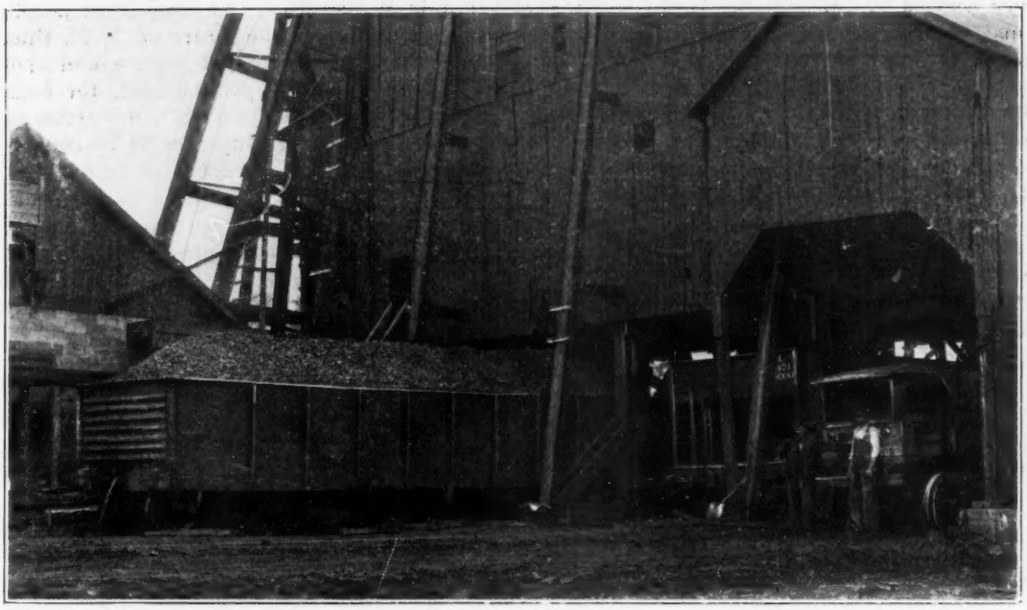
During 1919 the company moved by truck from mine to cellar approximately 25,000 tons of coal. It was able to do this large business because all the company's product goes either into the bins of private residences, public buildings or business houses in Terre Haute. With the passing of last year the experimental stage terminated. Accurate cost data had been kept on all the expenditures connected with trucking and the company knew exactly what it cost. Its calculations proved that the business was on a firm financial footing.

Will Carry Eight Tons Without Trailer

To do the major portion of the hauling the Deep Vein Coal Co. is utilizing 5-ton trucks as manufactured by the Garford Motor Truck Co. Several details of construction embodied in these machines make them adaptable to the carrying of coal. In the first place, the wheelbase is only 128 in. long as against a 168-in. length found on most trucks. This not only allows more loading space but at the same time permits of a smaller turning radius. In this design of truck the engine is carried above the front axle and beneath the cab.

The all-steel body has a capacity of 135 cu.ft., which by crowning allows for a load of five tons. However, sideboards may be carried on the top of the body, thus permitting the capacity to be crowded up to eight tons if necessary. Four forward speeds and one reverse furnish a gear ratio indispensable to the movement of a truck of this size over all sorts of roads and grades. The maximum speed is 10 miles per hour. A centrifugal governor controls the throttle lever and holds the rotational speed of the motor between 900 and 1,000 r.p.m.

All the trucks used by this company are equipped with an oil hoist manufactured by the Wood Hydraulic Hoist & Body Co., of Detroit. With this device it is



Taking Coal From the Tipple

One of the three railroad tracks has been filled in with earth and the truck which uses it is loaded by the same methods as were the railroad cars it has displaced. The trip from the mine to town is five miles and in the month of June 10,000 tons were delivered by truck.

possible for the driver to discharge the load in less than a minute and a half. With a proper manipulation of the clutch a separate hoist gear located on the crankshaft engages the pinion which operates the hoist. The fore part of the body is elevated until the coal has been discharged through the suspended rear door. It then slowly settles back on the chassis.

The principle involved in the operation of the hoist in retreat is that of forcing oil through an ever-decreasing valve opening. A level within reach of the operator allows him to trip the door at the rear of the body without leaving his seat in the cab. In this manner ease and rapidity of dumping are assured. These are two all-important factors that go far toward determining the number of trips made per day.

Small Orders Filled from Stock Pile

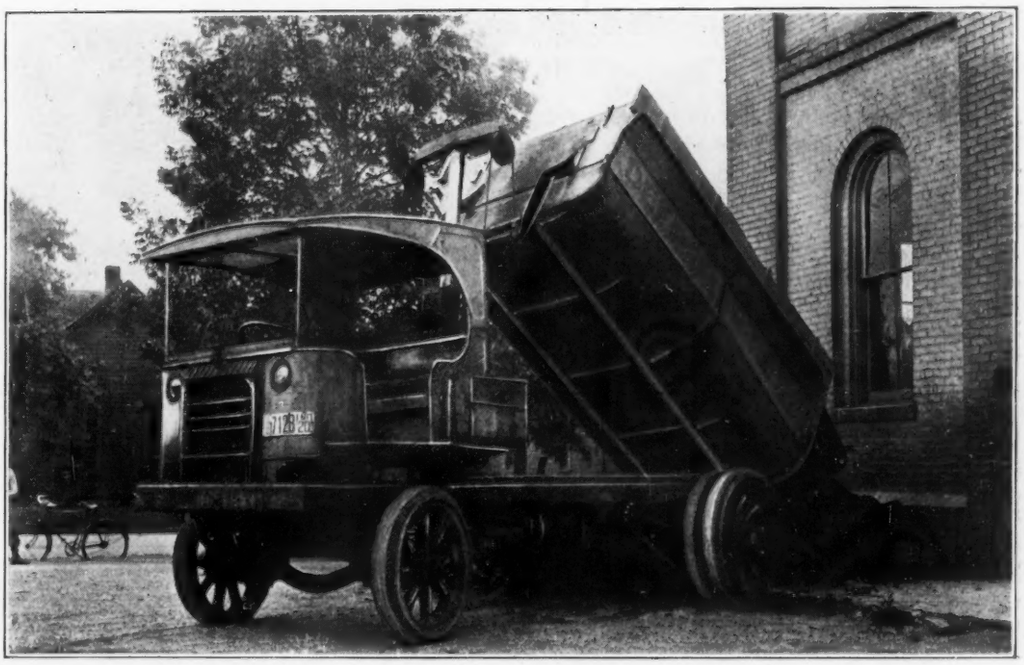
Most of the business of the Deep Vein Company is with private property owners in the city. Today practically all the coal moved by truck from this concern's mine, which is located near West Terre Haute, about five miles out of the city proper, goes in relatively small orders into the bins of private, public and business houses. Some coal is sold to industrial plants, but not a great deal, as most of these latter buy in large lots and are so equipped that the railroad cars can be moved into a private siding on their own grounds. Orders for less than five tons are filled by smaller trucks operating from a storage pile that is maintained by the larger machines.

Arrangements at the mine are not particularly noteworthy. The property is an old one and was, of course, so designed that the coal could be shipped by railroad cars. Three tracks pass beneath the tipple. At present only two of these are being used for railroad shipment, even when cars are available. The bed of one of the tracks has been filled in so that the rails are scarcely visible. It is upon this track that the trucks drive under the tipple to a point beneath one of the loading chutes. The coal is then loaded into the truck in much the same manner as would be the case if a railroad car were being filled.

When there is a shortage of railroad cars, more trucks

Delivering Coal

These trucks take 13,000 lb. of coal from the mine to the consumer. This machine is dumping that amount of coal into the basement of a schoolhouse in Terre Haute. The dumping is done in 90 seconds, the driver not having to leave his seat.



are pressed into the truck service by the company and all three loading chutes may be utilized for that purpose. At present the shortage of cars is not felt, but if it were, more efficient operation of the trucks could no doubt be secured. Most of the time cars are available on both tracks. This leaves only one track for the loading of the trucks. It often happens that two or more machines may arrive at the same time on their return from the city. Some time is then lost through the taking of turns in loading.

Rumors around Terre Haute would indicate that this firm is soon to purchase a mine located near the city but inaccessible by railroad. If this purchase is made it is believed that the tipple will contain some new features of design in which more allowance will be made for truck loading than is found at any other mine in the country. The tipple of the coming mine, when located in or near a consuming field, will provide for truck loading almost to the same extent as for the loading of railroad cars. In particular will this be true of operations located near the large cities. The coal of the Deep Vein company is now weighed on the truck at a surface building provided for this purpose.

Usually No Return Load Can Be Secured

Upon their return to the mine the trucks usually are empty, although this is not always the case, for new machinery and equipment as well as supplies which the mine needs are delivered in this manner. At one time it was impossible to procure props by reason of the scarcity of railroad cars. The trucks came to the rescue and kept the mine in operation by hauling the timbers for a distance of thirty miles. This practice was continued until shipments by rail again became more or less normal. Other instances might be cited of times when the motor trucks have kept the mine working while other companies nearby were forced to suspend operations.

Employing the number of trucks that it does, this firm is able to purchase gasoline and oil in wholesale quantities and at wholesale prices. This means a considerable saving, but one that would be within reach of most companies engaged in moving any large amount of coal. During July gasoline was being purchased at 26c. a gallon and oil at 53c. Three miles of operation could be realized from one gallon of gasoline, while each gallon of oil furnished sufficient lubricant to the motor for 200 miles of travel. Labor, repairs and spare parts cost approximately a total of $25 per month per truck. The wages of the drivers will run about $130 monthly.

The type of Garford truck used is equipped with solid tires, the rear ones being dual. The front tires, which are 36 x 6 in. in size, cost $75 apiece, while the rear ones, 40 x 7 in. in dimensions, cost $85 each. Each truck is easily able to complete five round trips daily between the mine and the city. Sometimes as many as eight trips are made in a single day. A highly conservative estimate would be to allow each truck a travel of 1,000 miles monthly. Assuming that each truck makes this number of miles per month, let us see what the cost of operation is per mile, using the figures already presented:

COST OF OPERATING TRUCK, PER MILE

	Per Mile
Gasoline—3 miles per gal. at $0.26	$0.087
Oil—200 miles per gal. at $0.53	.003
Tires—$320 per set guaranteed for 10,000 miles	.032
Labor, repairs and spare parts—$25 per month of 1,000 miles	.025
Driver's wages—$130 per month of 1,000 miles	.130
Total cost	$0.277

The cost per mile of operation, the Deep Vein people estimate, closely approximates the figure of 27.7c. thus obtained. Hence the average cost of each round trip is roughly $3. This is not the per-ton cost, for each machine is equipped with sideboards and carries a load of from six to seven tons. In order to be conservative, let us assume that the average load is six tons. The cost per ton by truck transportation is thus 50c. This assumes that the truck returns to the mine empty. However, as was previously mentioned, this is not always the case. The movement of fifty tons of coal from mine to cellar by this firm costs approximately twenty-five dollars.

Freight to Railroad's Own Yard Is Higher

Now let us contrast this last-mentioned figure with the charge made by the railroads around Terre Haute for the shipment of a like amount of coal. If the material is moved by car from the mine to the railroad yards, the freight rate is 60c. per ton. This is the prevailing charge on both the Pennsylvania and Big Four lines. For a movement of fifty tons by rail the railroads demand $30. Thus there is a clear saving of $5 on every fifty tons moved to the city by this method.

The distance by rail from the mine to the city yards is four miles, while the trucks must take a longer route—one about five miles in length. This feature would be reversed in most districts, for as a rule the dirt road is shorter than the steel one.

While the trucks transport the coal over a greater distance than the railroads and yet do it more cheaply than they, the advantages by no means stop at this point, as the coal delivered by rail to the yards must be handled still further. Teamsters and truckmen in Terre Haute charge a flat rate of 75c. a ton for delivering coal from the yards to residences and business houses within the town. This rate probably is today lower than in any other section of the country. The advantage in this particular thus favors the railroads. The price asked for delivering coal from the yards includes labor cost for shoveling from the car into the wagon or truck and the upkeep of the teams or motor cars.

Fifteen Tons Is a Teamster's Measure

If an ambitious teamster handles fifteen tons of coal a day he is doing a man-sized job. Suppose he does load and haul that amount of coal—merely to load which from a good shoveling surface is often regarded as a big day in the coal mines. He receives the sum of $11.25 for his work, out of which he must feed his stock, or if he has a truck must foot gasoline and oil bills, to say nothing of allowing a fair sum for amortization of his equipment. Certainly under these circumstances no agent of the Department of Justice would camp on his trail for profiteering.

Seventy-five cents a ton on fifty tons amounts to $37.50. Add to this the amount collected by the railroads for freight ($30) and there is a grand total of $67.50. Subtracting the $25 that is required for the moving of fifty tons direct from mine to cellar by truck, and there is a balance of $42.50.

This represents clear money saved by the trucks against the combined railroad-and-team shipment. Each truck transports about thirty tons of coal daily. On every fifty tons transported $42.50 is cleared by using the ship-by-truck method.

The present cost of a 5-ton Garford truck is about $6,300, including war tax. The Deep Vein firm estimates that the life of one of these machines is about six years. According to these figures, little more than a year's time is required for a truck to pay for itself, and this Terre Haute concern is convinced that each of its investments of this kind has been retired in a year or less.

Assuming, then, that the life of the truck is six years, something like $30,000 will have been earned by the machine after it has paid for itself and before it has become so run down as to demand either selling as second-hand equipment or scrapping. Here is a figure well worth pondering over—$30,000 earned per truck life, in which time the original investment has been retired and upkeep expenses met and that during a period when the country is clamoring for railroad cars.

If the larger cities located in the heart of the various coal fields were served by trucks to the same degree as is this Middle Western town the number of railroad cars released for the longer hauls would reach a figure truly impressive. In fact, we would no longer be confronted with any car-shortage nightmare.

Of all the cities in the East, Pittsburgh lends itself most readily to the "from mine to cellar" movement, for trucks could serve not alone the bins underneath residences and business houses but many of the large industrial plants. Many of these latter could be equipped over night for rapid unloading of the trucks. The "Ship-by-Truck" slogan as applied to the movement of coal over short hauls is not a fanciful one, as is shown by what this single company experienced.

Three or Twelve Years for Mine Timber?

For Thirteen Years the Philadelphia & Reading Coal & Iron Co. Has Been Treating Timber and Has Been So Successful That It Is About to Erect Another Plant—It Now Uses Silicon Fluoride as a Preservative

By Dever C. Ashmead
Wilkes-Barre, Pa.

During the last few years the cost of timber has soared. Not only has the price kept rising but the supply has been steadily decreasing. This has made it necessary to haul what timber is used greater and greater distances, which in turn means an ever-increasing freight rate. At the present time the Philadelphia & Reading Coal & Iron Co. has to purchase all its timber from Virginia and North Carolina and has to pay a freight rate of over $4, which makes the transportation alone amount to more than the original cost of the lumber.

Anthracite mines probably require more timber than do bituminous operations of similar size and, as they have been operating for a much longer period than the bituminous mines, they have exhausted the timber supply near at hand and must perforce bring it from a distance. During the earlier days of mining no attention was paid to reforestation of the cut-over areas surrounding the mines, as no one had any idea how great was the drain that mining would put on our forests. Nowadays the mining companies, realizing the importance of a timber supply near at hand, are beginning to provide for the future by establishing forestry departments to which they commit the problem of reclaiming the idle forest lands around their operations.

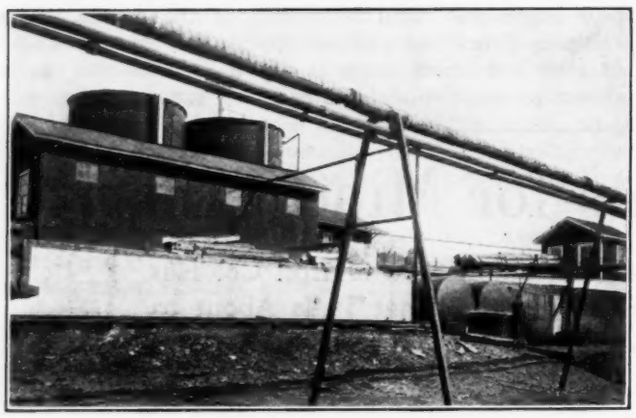
It is a noteworthy fact that the use of timber in the mines has been extremely wasteful. This was not

Gangway of Preserved Timber

This roadway was timbered ten years ago. In this mine, where three years is the usual life of timber, the use of preservative fluids has kept this timber in good condition for ten years and may yet keep it from decay for two or more years.

due entirely to the manner in which the material was employed but to the inherent conditions encountered in the mines themselves. The atmosphere in the mine is always damp. The ends of the timbers rest on wet ground or against wet surfaces. This causes them to rot rapidly, and in a short time, not over three years, a set of timber is destroyed and has to be replaced.

Let us suppose that a roadway is timbered with sets placed on 3-ft. centers with legs 9 to 10 ft. long and from 12 to 18 in. in diameter, and with caps 7½ ft. long. Such a set contains about 275 board feet, so



TIMBER-TREATING PLANT AT SILVER CREEK
The long building, covered with corrugated iron, houses the treating cylinder. The two large tanks to the rear of this building are the supply tanks. The building to the extreme right protects the hoisting engine. Between the two buildings are the mixing tanks.

that if the heading is 1,000 ft. long, approximately 92,000 board feet of timber must be replaced every three years.

In many instances such headings have to be maintained for 30 or 40 years. There is in addition to the cost of the timber the expense of the framing, lowering into the mine, the haulage to the point of use and finally the cost of taking out the old timbers and of installing the new ones.

About 1907 the Philadelphia & Reading Coal & Iron Co. started experimenting with various means to increase the life of timbers. At first it tried the open-tank method of treatment, and although longer life was secured from timbers thus treated than from those that were untreated the company felt that it was not getting the most satisfactory results. It was then decided to adopt a pressure treatment in order to get a proper penetration of the preservative used. In 1908 or 1909 it constructed its present plant at the Silver Creek colliery.

This plant has two supply tanks each with a capacity of 21,000 gal. For treating the timber it has one large cylinder, 6 ft. in diameter and 32 ft. long with a capacity equal to treating on an average ten mine sets. Two mixing tanks also are employed, in which the solutions are prepared for use in the treating cylinder. Two pumps are provided, one to place a sufficient pressure on the cylinder when the timber is being treated and the other to transfer the solution from the mixing to the supply tanks. A small hoisting engine is provided to handle the loaded cars from the yard to the cylinder and to withdraw the timber therefrom after treatment.

A short description of the method of treatment may be of interest. The timbers are first framed in the yard to the size required. They are then loaded onto the three treating trucks and pulled by the hoisting engine from the yard to the cylinder, into which they are allowed to run by gravity. As soon as they are in this chamber the end is bolted in place. The preservative solution is next allowed to run by gravity into the cylinder until the timber is entirely covered. Live steam is then turned on in order to raise the temperature to 212 deg. F.

The pump is started and forces the solution from the supply tanks into the cylinder until a pressure of about 100 lb. per square inch is provided. This pressure is maintained for a period of about two hours for seasoned timber and for from eight to ten hours for green timber. After the treatment is complete a valve is opened, and the solution is allowed to run into the mixing tanks, whence it is pumped into the supply tanks, to be ready for the next treatment. Ordinarily three treatments are performerd every eight hours.

Owing to the difficulty in getting sufficient penetration with green timber except after long treatment the company prefers to use seasoned material—that is, timber that has stood for about sixty days in the open after cutting. It tries to secure a penetration of the preservative at least 4 in. deep. Frequently this figure is exceeded and sometimes total penetration is attained.

Zinc chloride was the first solution used for the treatment of timber in this plant, but this chemical became so expensive that its use had to be abandoned. It also was found that it had a bad effect on the metal parts of the treating apparatus, and the cost of repairs consequently was high. The price of zinc rose from 4 to 16c. per pound. In 1910 and 1911 much gas tar was used, but about five years ago both of these reagents were abandoned, and a solution of a silicon fluoride has been used ever since.

When treating the timber with zinc the company tried to force about ½ lb. of zinc chloride into each cubic foot of wood treated. With the silicon fluoride, however, only 0.3 lb. was required per cubic foot. As this treatment used less preservative and as the latter was less expensive a large saving was effected. Silicon fluoride at the present time costs 14c. per pound, while zinc chloride costs 16c. It was found that the fluoride attacked the metal parts of the plant less vigorously than did the zinc chloride and therefore reduced the cost of repairs. It also has a greater toxic effect on the timber treated.

After Ten Years Timbers Are Still Good

In one of the accompanying illustrations may be seen a heading in the Silver Creek mine, showing the treated timber therein. Practically all the sets visible have been treated with either zinc chloride or gas tar. They have been in place for over ten years and all are in good condition at the present time. Untreated timber in this heading will last only three years at the most as against the ten that these treated sets already have stood, while their good condition promises still longer service. A clear gain of at least seven years is shown in the life of the timbers in these headings and they probably will last at least two years more.

From the foregoing it would seem that there is no reason why every mine that has to bring its timber long distances, or where much permanent timber has to be maintained, should not have its timber-treating plant and so make great savings in its bill for roof-supporting material. This is true, however, only for a mine or heading not undergoing a squeeze or movement of the roof.

Cars Without End Gates Can Now Be Used On Self-Dumping Cages

Solid-Body Mine Cars Possess Many Advantages Over Those of the End-Gate Type—A Cage Has Been Developed That Discharges These Cars More Quickly and with Less Degradation of the Coal Than Did the Old Style Cage

By Arthur M. Simpson
Chicago, Ill.

SOLID-BODY mine cars afford important advantages in all mining operations because of their lower cost, their greater strength and durability, and the fact that such cars will not leak material along the tracks of the mine. The naturally increasing desire to use solid-body cars at mines where skip hoisting is not feasible has created a demand for equipment that will hoist and dump them.

The solid-car self-dumping cage was developed primarily for the hoisting of boiler coal and rock in the airshaft of a mine that uses a skip hoist with a rotary car-dumper at the bottom of the main shaft. It showed such advantages in its easier dumping of the coal without breakage, its reduction of the power required for hoisting, and its decrease in the pressure on the guides in the dumping operation that it has been developed into a highly satisfactory cage for use in old mines already equipped with self-dumping cages or for small-shaft operations that do not have enough capacity to warrant a skip-hoisting installation with a rotary dump at the shaft bottom.

Hopper in Cage Fitted with Dump Cradle

Fig. 3 shows the general design of a solid-car self-dumping cage. The car is carried on a cradle which is mounted inside a hopper, the latter being provided at the lower end with a hinged discharge gate. The cradle is built in the form of a hoisting platform suitable for handling cars, men or material, as is the case with most mine cages. It is pivoted on heavy trunnion shafts passing through the hopper at each side, with the dumping arms and rollers fastened to their outside ends. The motion of the dumping rollers in the guides at the head of the shaft causes the cradle to rotate 135 deg. so as to unload the solid-body car into the hopper within which the cradle swings. Both the cradle and the gate are positively locked, except when at the dumping point, making the cage suitable for the hoisting of men and material whenever desired.

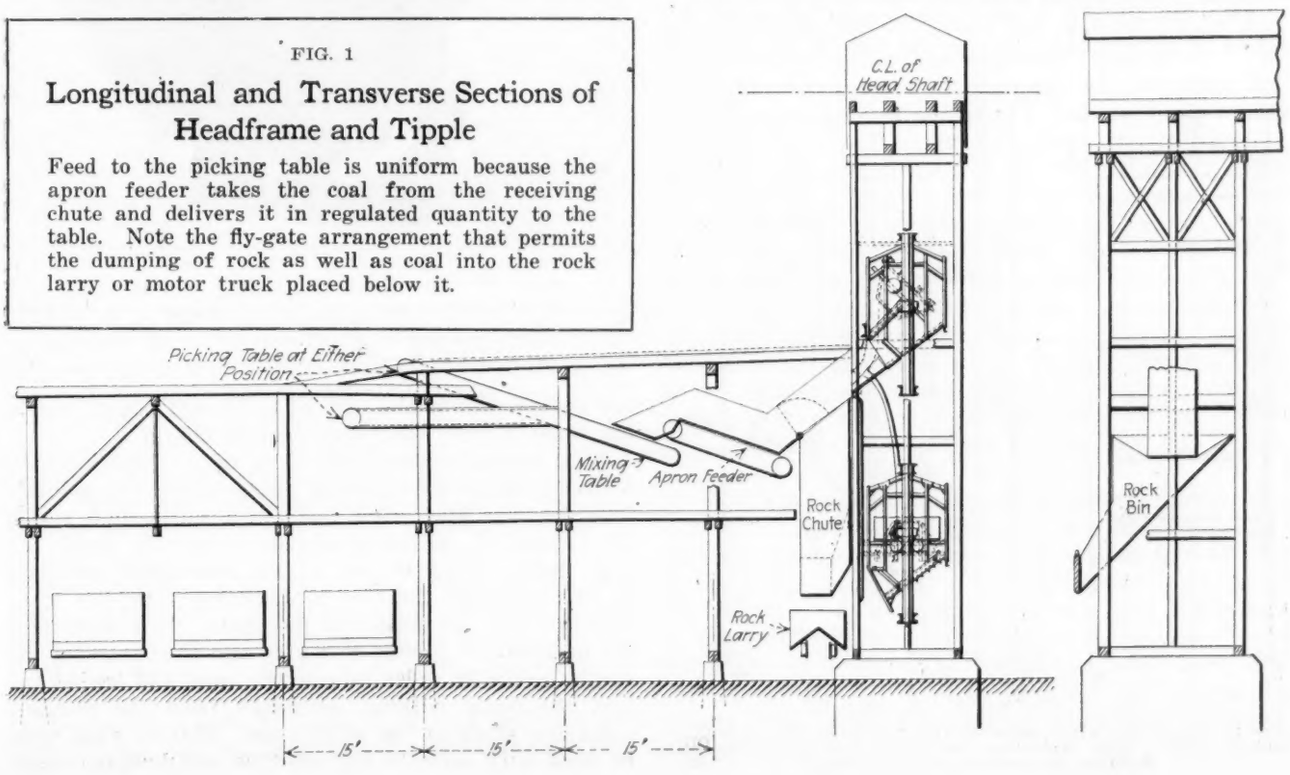
Fig. 2 illustrates the operation of the dumping mechanism. As the cage approaches the dumping point, the guides first operate to unlock the gate and the cradle in which the car stands. The rollers on the overturning arm next enter the main dumping guide, as indicated on the drawing, turning the cradle over in an easy rotation, until the car finally reaches the overturned position. In this connection it should be noted that the rotating cradle is pivoted at a point only slightly to one side of the center of gravity of the loaded car and cradle, so that the car is rotated on a center quite near the center of gravity.

The turning movement thus requires a minimum

FIG. 1

Longitudinal and Transverse Sections of Headframe and Tipple

Feed to the picking table is uniform because the apron feeder takes the coal from the receiving chute and delivers it in regulated quantity to the table. Note the fly-gate arrangement that permits the dumping of rock as well as coal into the rock larry or motor truck placed below it.



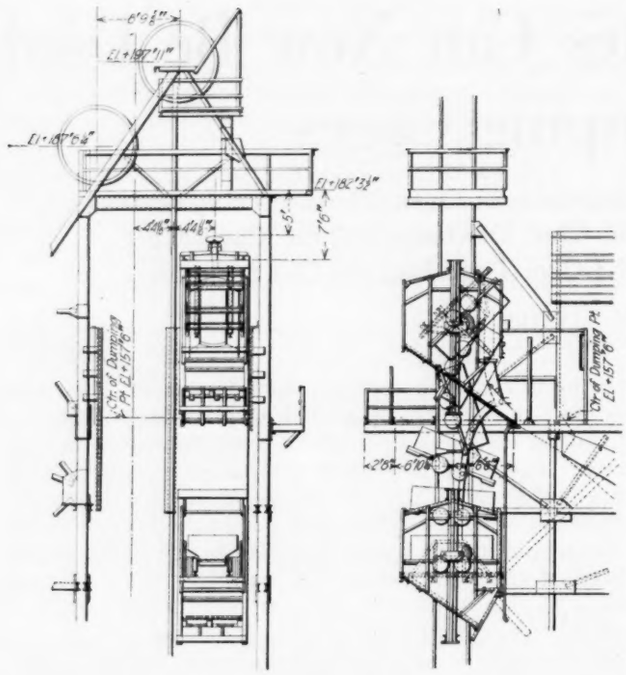


FIG. 2. ARRANGEMENT OF THE HEADFRAME

Movement of cage and car in dumping is shown as in a motion-picture film. The platform begins to tilt before the cage reaches the end of its travel and by the time the chute on the bottom reaches the dump level the car has been tossed over and the coal is ready to discharge.

pressure on the rollers and guides—a pressure less than one-half the guide pressure resulting from the operation of the old type of self-dumping cage. In addition to this, with the hopper under the car it is possible to make the dumping guide as long and with as easy a curvature as desired, so that the overturning movement may be gradual and smooth, eliminating any excessive stress or jar in the dumping operation, while the coal is spilled out of the car into the hopper easily, with breakage prevented by a dumping shield.

After the gate is unlocked it is held closed by the action of the dumping rails at the side of the shaft, so that the coal which is dumped into the hopper cannot be discharged until this gate is allowed to open at the dumping point. By the time this point is reached the coal has all been unloaded from the car and flows in one sliding motion immediately across the gate to the weigh hopper or screens without any fall whatever. The gentle handling of the coal in this dumping operation is a big advance over the old self-dumping cage, which pitched the load of the car out into the dump hopper, breaking a considerable percentage of the more valuable coal.

One advantage secured from this design is that the entire weight of the cage and car is always kept on the rope, giving a maximum counterbalance effect to assist in starting the loaded cage from the bottom of the shaft. This materially reduces the maximum peak load on the hoist, allowing the use of a smaller hoist-

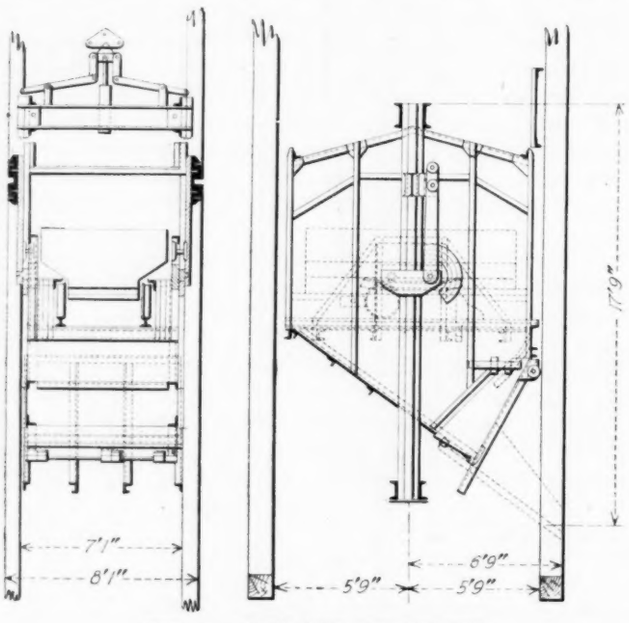


FIG. 3. CAGE AND ITS GUIDES

The button on the guide revolves 135 deg. as it passes along a slotted path. This revolution overturns the solid mine car, dumping its contents into the hopper.

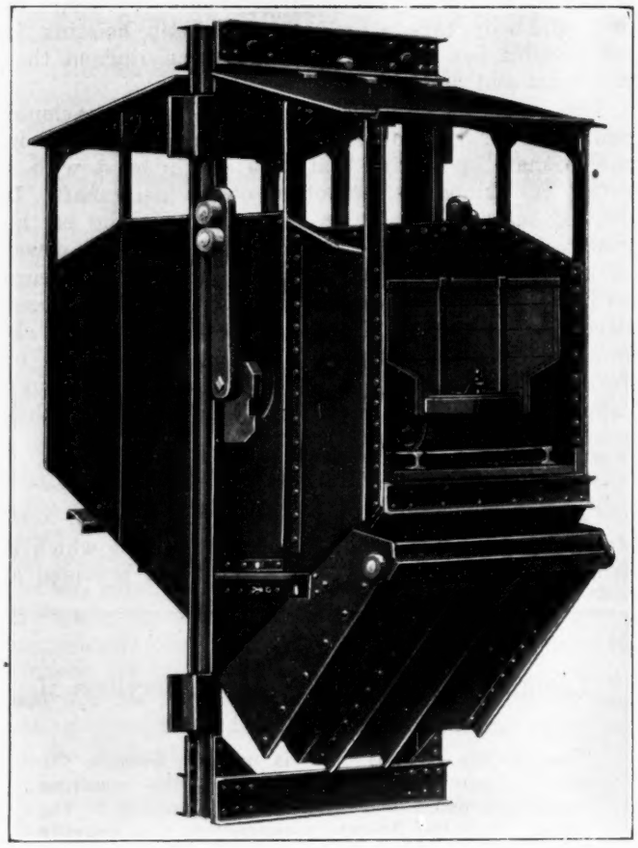


FIG. 4. DETAILS OF THE CAGE

A hopper is placed just under the floor of the cage, into which the coal is dumped and from which it slides to the receiving chute. On the floor of the cage men and material can be carried as on ordinary cages.

ing engine and, in the case of purchased power, securing a much lower maximum-demand charge.

With this equipment there is no need to operate with a slack rope, as the dumping guides curve so gradually that the cage may enter them at a fairly high speed. The retarding action continues uniformly until the cage finally comes to rest in the overturned position, at which instant the load is discharged and the other cage lands at the bottom of the shaft. This eliminates the necessity of coming to a stop and then starting the engine again in order to pull the cage and loaded car into the dump without assistance from the counterbalancing effect of the other cage. This is what must be done with some of the old-style self-dumping cages

which had to make two stops at the dumping point. The result is an increase in capacity. There is also another saving in power through the elimination of the peak load on the engine.

Another advantage that appeals to every operator of a shaft mine is the fact that with a solid-car self-dumping cage which is manufactured by the Car-Dumper and Equipment Co., of Chicago, Ill., the dumping operation and the hoisting cycle are positive and regular. Every time the cage reaches the dumping point the load is discharged without chance of failure, whereas with the old-style self-dumping cage it is necessary to depend on the catching of the end gate by the crane. The frequency with which some cages miss the crane, requiring the taking of the dump a second time, is a continual source of lost time and annoyance, and demands constant watchfulness on the part of the tipple men and hoisting engineer.

For anyone not familiar with this condition at his own mine an investigation would be more than worth while. At one of the mines that several times during the last two years have held the world's hoisting record for the old style of self-dumping cage an extended test showed that 10 per cent of the cars missed the crane on the first dump and had to be lowered and taken into the dump the second time.

With the solid-car self-dumping cage this uncertainty is eliminated. The engineer knows he is going to make the dump every time and he merely has to stop and wait for his bell. The result is an increased hoisting capacity from this cause alone, and a much decreased chance of accident, as the hoisting operation is simpler and more regular.

Fig. 1 illustrates the general application of this type of cage. This shows the device in the head frame and indicates the relative positions of the dumping guides and the dumping rail, also of the cage when in the shaft and in the dumping position.

Thus the operating advantages of this cage alone make its use desirable, quite aside from the fact that it permits of the use of solid-body cars, in whose superiority every mine operator is vitally interested. The weakness of a box with one end knocked loose (the end-gate car) and the strength of the same box after that end has been firmly nailed in place (the solid-body car) are readily apparent. The differencee is one between a wobbly structure that is easily torn to pieces and a rigid construction that will stand much punishment.

The main reasons for the high costs of car repair practically disappear when the cars in a mine are built with solid boxes. End gates were put on mine cars only as a compromise between ease of dumping and strength of car. But surely the former condition was obtained at too high a price when the strength of the car, its life, safety and freedom from leaks were sacrificed and when the repair charges on the car were made excessively high. The end-gates weakened the cars greatly and thereby increased the cost of car maintenance. They also increased the first cost of the cars because of the extra work and material required in building them.

The gate makes a bad-fitting end in any car, one that leaks coal dust all along the entries of the mine, causing additional expense for track cleaning as well as creating a dusty condition which is highly conducive to mine explosions. It is a frequent cause of wrecks, because so much coal is spilled on the track that the rails are often buried. In fact under severe haulage conditions the gate may open during the transit of the car and a large body of coal be precipitated on the track. Builders of mine equipment know the weaknesses of end-gate construction and would much prefer to supply the simpler, more satisfactory and more substantial solid type of cars.

There is now available in the shape of the dump above descriped an inexpensive equipment that will empty the contents from a solid-body car with less effort, with less labor and with less breakage than was ever possible with a wagon of the end-gate type. It is not necessary where this device is installed to discard end-gate cars now in use. The end-gates may be permanently closed, making the cars essentially solid. Thus would be secured all the advantages of lower car cost, lower car maintenance, cleaner roadways, fewer wrecks, greater capacity, reduced labor and a better product. As additional cars are needed in future, they, of course, would be of the less expensive solid type.

The cost of the solid-car self-dumping cage for a new mine or for the replacement of old cages is not large. The actual amount depends on the size of the car and the general hoisting conditions. The life of the new equipment is much longer than that of the old style, because its operation is much easier and smoother, eliminating the stresses and shocks that rack and eventually wreck the old type of cage.

One Big Union Opposes United Mine Workers of America as Foreign Organization

W. H. ARMSTRONG, for the last three years director of coal operations for the Province of Alberta and the Southeast of British Columbia, denies the charge that the Dominion government has been attempting to force the coal miners to enter a foreign organization, which is the way in which the United Mine Workers of America is always regarded in Canada by those who don't like its methods and aims. Mr. Armstrong states that the United Mine Workers, which is in affiliation with the American Federation of Labor, three years ago entered into a two-year agreement with the Western Canada Coal Operators' Association. The agreement was carried out amicably on both sides and at its expiration was extended a year without formal renewal. On April 1 last the agreement was formally renewed, but a provision for the "closed shop," which did not exist in the old agreement, was made.

Formerly the operators, if they so desired, could employ non-union men, but under the new agreement the demand for the closed-shop principle was recognized. An arrangement between the men and the operators, such as is common in many other industries, was made for the collection of dues. The wage scale is based on the selling price of coal, which is now, for instance, at Drumheller, Alberta, $6.10 per ton at the pit mouth. This agreement was ratified by the men by a vote of nearly three to one.

"So far as the Dominion government is concerned," said Mr. Armstrong, "it had nothing whatever to do with the arrangement between the United Mine Workers and the operators. The agreement was solely between the men and the employers, and statements by the One Big Union or others to the contrary is in controversion of the facts." Mr. Armstrong added that the mines were all working and the men apparently were satisfied with the scale of wages and the conditions.

Modifications of Gathering Reels Which Will Prevent Destruction of Cables

With These Gathering Reels Spooling and Unspooling Are Accomplished with an Approximately Uniform Tension on the Cable—No Fixed Relation Exists Between the Peripheral Speed of the Reel and the Linear Speed of the Locomotive, so the Machine Cannot Run Over and Cut Its Cable

By D. E. Shroyer
East Pittsburgh, Pa.

ECONOMICAL delivery and withdrawal of cars from working places to a main or butt entry is a problem ever present with the coal operator. In the past this work has in many cases been accomplished by the miners themselves pushing the cars in and out of the rooms or by the use of mule power.

Mines have been electrified and many electric locomotives have been installed, but still this particular piece of mining work has been done in many cases by old methods. These methods cause the miner to lose time. In some mines the problem of how to bring cars from the room face to the entry has been overcome by the installation of locomotives equipped with motor-driven conductor-cable reels. The purpose of this article is to describe a horizontal-type of conductor-cable reel that has given highly satisfactory service.

"Horizontal" as here used refers to the position of the reel drum with respect to the locomotive and reel frame. This can best be understood by referring to Figs. 1 and 2, which show the reel mounted on the locomotive ready for operation.

The reel is entirely self-contained, with a shunt-type of motor mounted inside the reel drum and connected to the line through a canopy switch, fuse and permanent resistance, as shown in Fig. 3. The resistance is so connected and is of such capacity that the reel motor may be left connected across the line. It then will maintain approximately a constant pull on the cable while either reeling in or reeling out. This is a feature that is obtained only on this particular reel and is produced by the arrangement of resistance in the motor circuit.

By maintaining approximately constant pull on the cable in both directions of reeling it will be picked up off the ground ahead of the locomotive regardless of the speed of the latter, thus preventing the machine from running over the cable and cutting it, with resultant delay. The permanent resistance is divided into two sections. One section (*A*) is in series with the shunt field and armature, and the other section (*B*) is in series with the armature alone. (See Fig. 3.)

The resistance is of such capacity and so proportioned that the reel can be operated on any potential from one-half up to full voltage. The resistance units as shown in Fig. 4 consist of iron tubes (*A*), upon which is wrapped mica and asbestos insulation. High-resistance wire is wound on these tubes and held securely in place at the end of each tube by clamps. These also serve as connecting leads between the tubes. To protect the resistance wire or element, the surface of the tubes is coated with cement and the whole is then baked and dried.

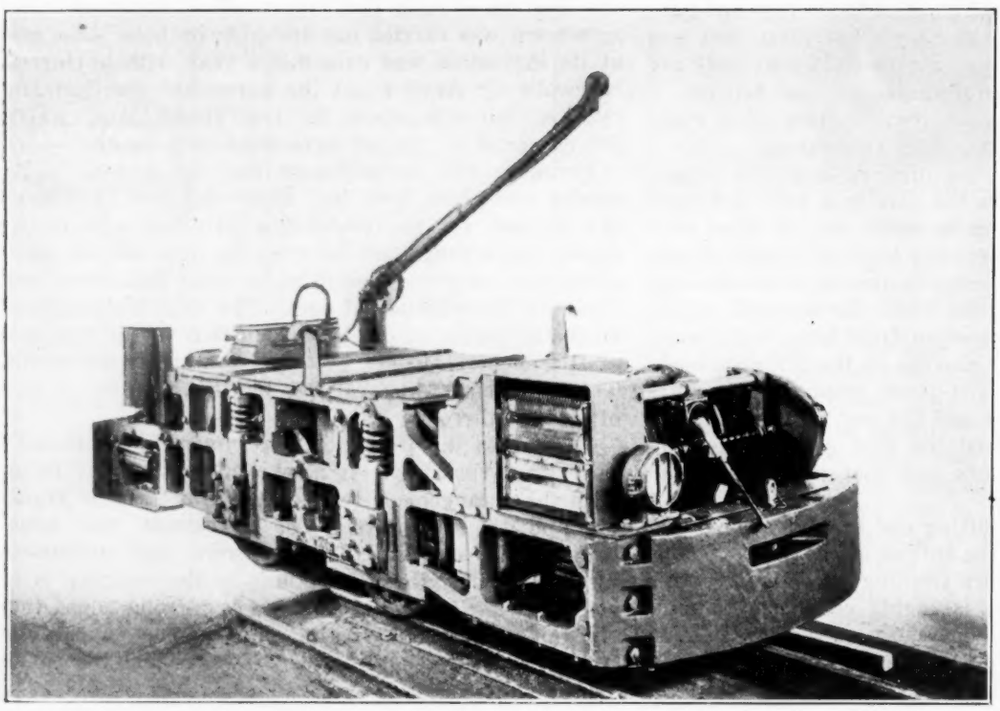


FIG. 1.

Cable-Reel Locomotive

The illustration shows the cable terminal hook and the resistance units, the former looking for all the world, in the position viewed, like a large screwdriver. It also shows the clips by which the trolley pole is kept in place when not in use.

FIG. 2. FRONT VIEW OF LOCOMOTIVE
Note the relative position of reel and resistance as well as the spooling mechanism.

Four resistance tubes are connected in series and taps taken off at predetermined points to give the following resistance values, *T* representing trolley; *F*, field, and *A*, armature:

For 250 Volts		For 500 Volts	
TF to *F* +	15 ohms	*TF* to *F* +	60 ohms
F to *A* +	6 ohms	*F* + to *A* +	24 ohms
Total	21 ohms	Total	84 ohms

The resistance units assembled complete between the end frames are inclosed within an expanded-metal screen (*B*, Fig. 4) which protects the tubes and wiring. This makes the complete unit suitable for mounting in various locations on the locomotive. The terminal studs (*C*) in the end-frame (*D*) are of rugged construction and are brought through a hole in the frame insulated with mica washers and bushings built up so as to give ample insulation.

Reel Drum Insulated with Wood Strips

The reel drum (Fig. 5) is made from sheet steel of ample strength and insulated with hardwood strips (*2*) forming a casing around the entire periphery. The use of wood insulation on the reel drum greatly increases the life of the cable. It also prevents the cable from grounding on the drum, which in most cases would cause damage to adjacent parts of the reel. This wooden insulation is so applied that any portion of it can be removed with ease.

The spooling device consists of a casting which travels on a guide bar and lead screw. The guide bar (*1*) is located as shown in Fig. 6, directly above and parallel to the lead screw (*2*) and is of the same length. The lead screw limits and reverses automatically the travel of the spooling device (*3*) so that the cable is wound on the drum in even layers. The spooling guide is driven by a tongue (*4*) that engages with the lead screw, which is square threaded in both directions, that is, both right and left hand. This tongue is made from axle steel and given a special heat treatment.

One of these treated tongues has been in service on a certain property for approximately one and one-half years with no appreciable wear either upon it or the lead screw. The tongue is lubricated by applying a heavy grease or oil to the screw with which it engages. The rotary motion of the lead screw is produced by gearing so arranged as to feed either single or double-conductor cables. This is accomplished by means of suitable gears, the change from a single- to double-conductor cable requiring only the changing of one gear (*3*) and one pinion (*4*), shown in Fig. 5.

Porcelain Guide Increases Life of Cable

A porcelain guide (*5*, Fig. 6) is bolted into the spooling device. This has a bell-shaped opening through which the cable is guided onto the reel drum. The porcelain is double-glazed, which insures good wearing qualities. After the cable wears a slight groove in the porcelain in one position it can be turned to another position and so on until practically the entire surface of the opening in the porcelain has been worn away.

The shifting of the porcelain prevents the cable from being cut, thus giving it a largely increased life. When wood rollers are used as guides, they soon become grooved and cut the cable. Porcelain does not groove as quickly as wood, and although it costs slightly more the increased expense is repaid many times over in fewer cable replacements and lessened maintenance.

The reel has been so designed that all parts are readily accessible for inspection or repair without removal from the locomotive. It will be noted in Fig. 7 that it is necessary to remove only a few parts in order to

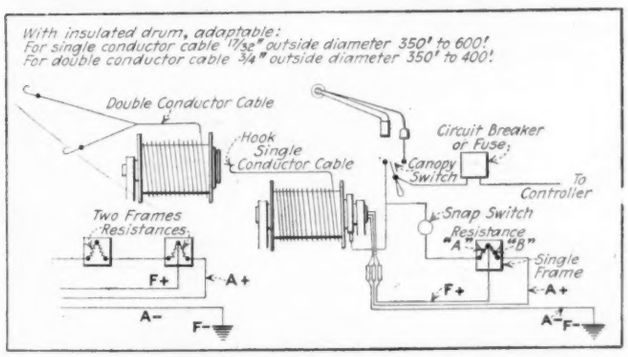


FIG. 3. DIAGRAM OF ELECTRICAL CONNECTIONS
Showing the relative positions of the trolley, reel, resistances, switches, circuit breaker or fuse, and the like.

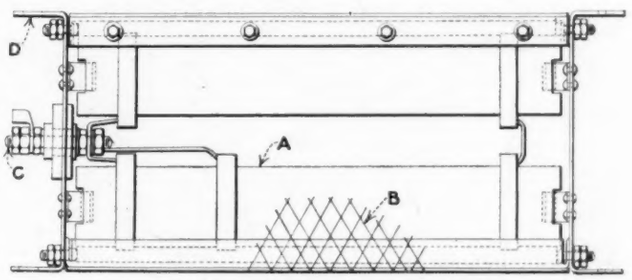


FIG. 4. SINGLE-FRAME RESISTOR
The resistance elements are inclosed for protection in a case of expanded metal. Section A is in series with the shunt field and armature and section B is in series with the armature alone. The resistance units consist of iron tubes (A) upon which are wrapped mica and asbestos insulation.

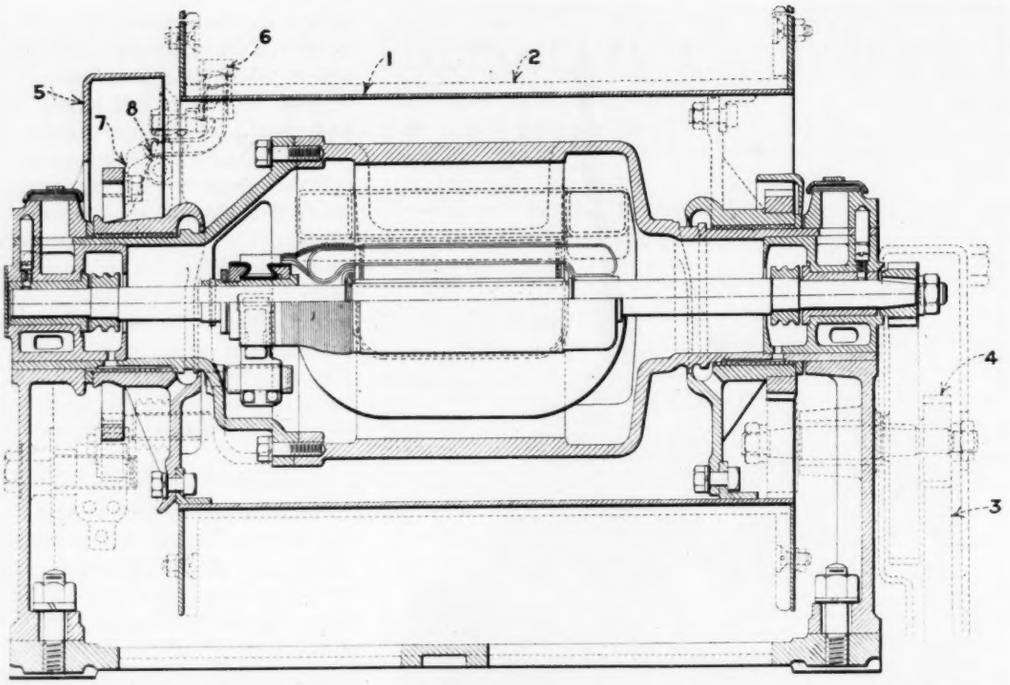


FIG. 5

Details of the Reel

The armature within the reel drum keeps a practically constant tension on the cable regardless of the direction or speed of travel of the locomotive.

overhaul the armature. The ease with which the armature can be overhauled on this reel can best be appreciated when this device is compared to the vertical reel. With a reel of that type it is necessary to remove the heavy drum together with the cable and other parts before the armature can be taken out.

The armature in this reel is of rugged construction and has operated satisfactorily without failure of any kind under the most severe working conditions. To make an inspection of the commutator and brushes it is only necessary to remove the guard (marked *5* in Fig. 5) over the collector. The bearings at both ends of the armature shaft are easily removed for inspection, repair or renewal.

The reel can be removed from the locomotive in approximately twenty minutes, as to accomplish this it is only necessary to remove four ¾-in. bolts and break wiring connections to reel resistance and to controller.

When using single-conductor cable one end is connected to the trolley-wire hook while the other end is led through a bushed hole in the barrel of the reel drum at the point marked *6* in Fig. 5. It is then connected to the terminal at point *7*, on the collector ring, which revolves with the reel drum. When double-conductor cable is used, the inside conductor on one end is connected to a trolley-wire hook while the outside conductor is connected to a rail hook.

The other end of the cable is led through a hole in the barrel of the reel drum and the inside conductor connected to the terminal (marked *7* in Fig. 5) on the collector ring, which revolves with the reel drum. The outside conductor is connected to the reel frame at the point marked *8* in Fig. 5, which is a part of the return circuit through the locomotive frame from the main motors.

Double-conductor cable as referred to above means

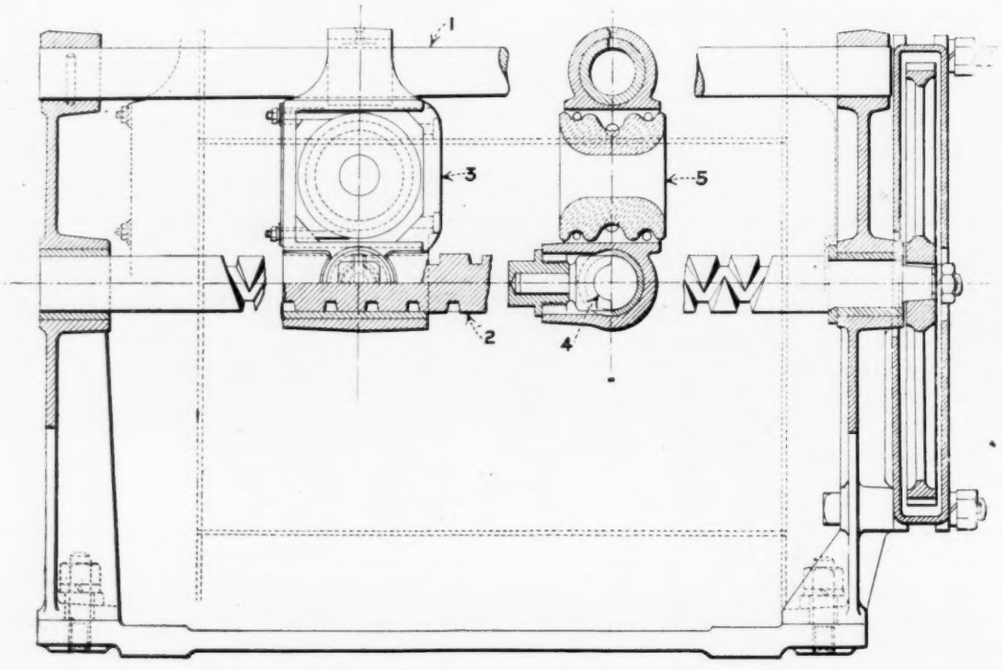


FIG. 6.

Cable-Spooling Mechanism

The right- and left-hand thread moves the guide back and forth across the face of the drum, winding the cable uniformly and smoothly into place. Detail 5 shows the porcelain guide which, bolted to the spooling device and having a bell-shaped opening, permits the passage of the reel without injury or excessive wear.

a concentric mining-machine cable. The inside conductor consists of forty-nine wires in seven strands around which is placed an insulation of rubber compound. This is then covered with a cotton braid and on top of this is placed the outside conductor, consisting of a layer of forty-one copper wires. Then on top of this outside conductor is applied a rubber compound, rubber-filled tape and two substantial cotton braids.

Single-conductor cable consists of forty-nine wires in seven strands around which is applied a rubber compound, a layer of rubber-filled tape and two layers of substantial cotton braid.

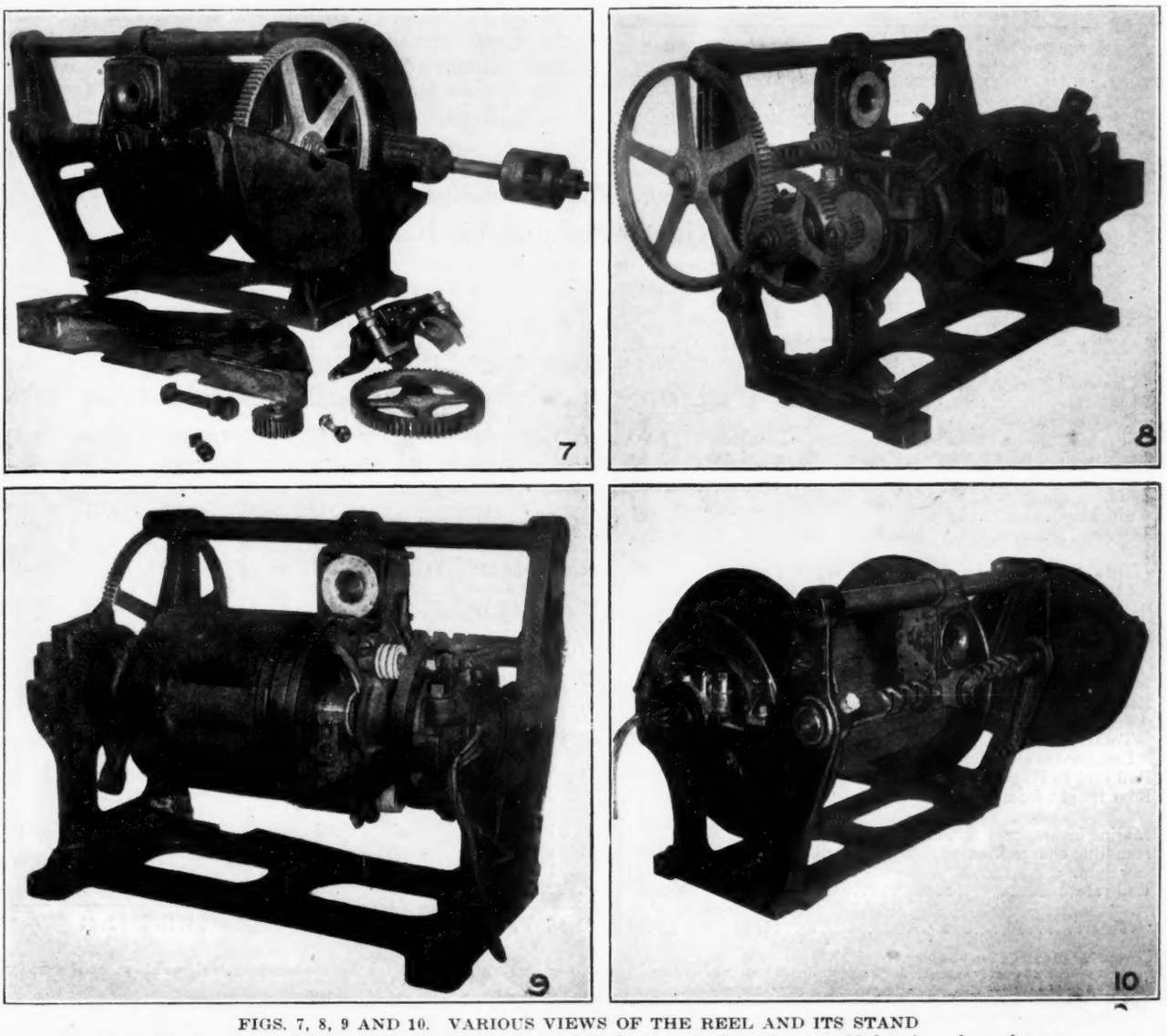
Advantages of Concentric Conductor Cable

The concentric double conductor cable is used for the following reasons: (1) It is easier to spool on the drum than twin or duplex cable. (2) It can be made to a smaller cross-section than the twin or duplex cable. (3) It weighs less per foot than the twin cable. (4) When the outside insulation wears off, the ground conductor only is exposed. This does not put the men using it in danger unless they should simultaneously touch both the trolley wire and this outside conductor. When the insulation wears off either of the conductors of a twin or duplex cable it is necessary to scrap it in order to prevent men from being injured in handling it and to avoid the possibility of placing a dead short on the line which might cause damage to the mine equipment. (5) The concentric cable has greater life than the twin or duplex cable.

Where either the single- or double-conductor concentric cable is used, the current for the main motors is taken from the collector ring by a brush and holder, then carried through leads to the controller and main motors.

The advantages inherent to this cable reel can be summarized as follows: The shunt type of motor with the arrangement of resistance here described has better operating characteristics than a straight series motor. The horizontal type of drum with the spooling device here used insures even and uniform cable winding.

Practically a constant pull is maintained on the cable at all times regardless of whether the locomotive is standing still, moving at variable speeds over level track or traveling down steep grades at high speeds. No fixed relation is required between the peripheral speed of the reel and the linear speed of the locomotive. The inertia of all the rotating parts, particularly that of the drum, is small. This affords a quick starting torque when picking up the cable.



FIGS. 7, 8, 9 AND 10. VARIOUS VIEWS OF THE REEL AND ITS STAND
The several parts or elements that make up the complete device as well as the assembled reel are here shown.

Freight Rates Influence New England's Choice of Coal

Freight Rate from Hampton Roads to Boston in 1914 Was 24c. Less by Water Than by Rail—Now It Is $1.88 Less by Rail—New Rates Expected to Reduce Margin—Change of Route Causes Difficulty

SUBSTANTIAL evidence on the reasons why New England is having trouble with her bituminous-coal supply this year is found in a study of the relation between all-rail freight rates from the coal fields in central Pennsylvania and the combined rail-and-water rates from the coal fields in West Virginia. The table of comparative rates shows how from a condition prior to the war under which Boston received coal cheaper by water than by rail the situation has changed and all-rail freight is now the cheaper.

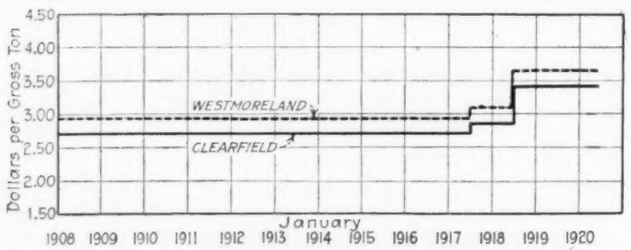


FIG. 1. RAIL RATES ON BITUMINOUS COAL FROM CLEARFIELD AND WESTMORELAND, PA., COAL FIELDS TO BOSTON, IN DOLLARS PER GROSS TON

In 1914 and earlier a gross ton of coal from the Clearfield region was carried to Boston for $2.60, and the rail-and-water rates on the same coal shipped through the port of Philadelphia was $2.26; through New York

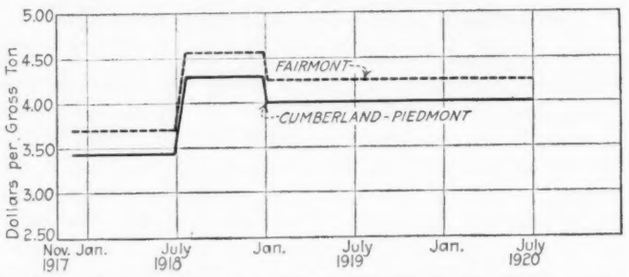


FIG. 2. RAIL RATES ON BITUMINOUS COAL FROM CUMBERLAND-PIEDMONT, MD., AND FAIRMONT, W. VA., COAL FIELDS TO BOSTON, IN DOLLARS PER GROSS TON

harbor $2.51, and Pocahontas coal was carried to Boston for $2.36. The advantage in rates in favor of water coal from Hampton Roads was then 24c. Today the freight-by-rail rate is $3.30 and by rail and water from the Southern port it is $5.18, a difference in favor of all-rail

Rates on Bituminous Coal to Boston, Mass.; Worcester, Mass.; Lowell, Mass., and Portland, Me., Via All-Rail and Via Rail and Water

From	Boston			Worcester			Portland			Lowell
	Present	Prior to June 25, 1918	Prior to War (1914)	Present	Prior to June 25, 1918	Prior to War (1914)	Present	Prior to June 25, 1918	Prior to War (1914)	Present
Clearfield Region:										
All-rail rate	$3.30	$2.75	$2.60	$3.40	$2.85	$2.70	$3.80	$3.20	$3.05	$4.00
Clearfield Region:										
Rail rate to Greenwich Pier	1.80	1.30	1.25	1.80	1.30	1.25	1.80	1.30	1.25	1.80
Boat freight from Greenwich Pier	1.00	2.50	.75	2.75	2.25	.65	3.25	2.65	.75	3.00
Marine insurance	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05
Handling charge from boat to cars, including weighing	.38	.21	.21	.35	.21	.21*	.35*	.21	.21	.38
Rail rate	....	....	....	1.05	.90	.85	....	....	....	1.05
Total	$5.23	$4.05	$2.26	$6.00	$4.71	$3.01	$5.45	$4.21	$2.26	$6.28
Clearfield Region:										
Rail rate to South Amboy	$2.15	$1.65	$1.55	$2.15	$1.65	$1.55	$2.15	$1.65	$1.55	$2.15
Boat freight from South Amboy	2.75	2.50	.70	1.75	1.75	.40	3.00	2.75	.75	2.75
Marine insurance	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05
Handling charge from boat to cars, including weighing	.38	.21	.21	.35	.21	.21	.35*	.21	.21	.38
Rail rate	....	....	....	1.05	.90	.85	....	....	....	1.05
Total	$5.33	$4.41	$2.51	$5.35	$4.56	$3.06	$5.55	$4.66	$2.56	$6.38
Pocahontas and New River Districts:										
Rail rate to Hampton Roads	$2.00	$1.50	$1.40	$2.00	$1.50	$1.40	$2.00	$1.50	$1.40	$2.00
Boat freight from Hampton Roads	2.75–3.25	3.25	.70	2.50–3.00	3.00	.65	2.90–3.40	3.40	.75	2.75–3.25
Marine insurance	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05
Handling charge from boat to cars, including weighing	.38	.21	.21	.35	.21	.21	.35*	.21	.21	.38
Rail rate	....	....	....	1.05	.90	.85	....	....	....	1.05
Total	$5.18	$5.01	$2.36	$5.95	$5.66	$3.16	$5.30	$5.16	$2.41	$6.23

* Plus 50 cents a car weighing.

Open market boat freights from Hampton Roads just prior to June 25, 1918, were approximately $1 higher than the boat freights shown above, which were U. S. Shipping Board quotations.

Boat freights shown under Worcester are the boat freights to the port of Providence, R. I. To Lowell they are the boat freights to Boston.

Boat freights shown from South Amboy, prior to June 25, 1918, were open market rates.

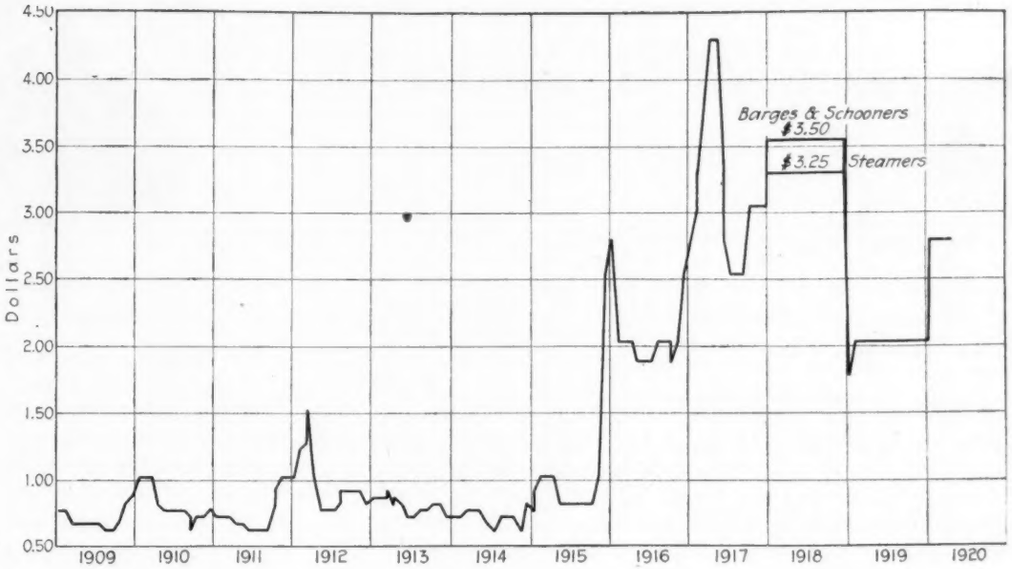


Fig. 3

Freight rates by water on bituminous coal from Hampton Roads to Boston, 1909 to 1920, in dollars per gross ton.

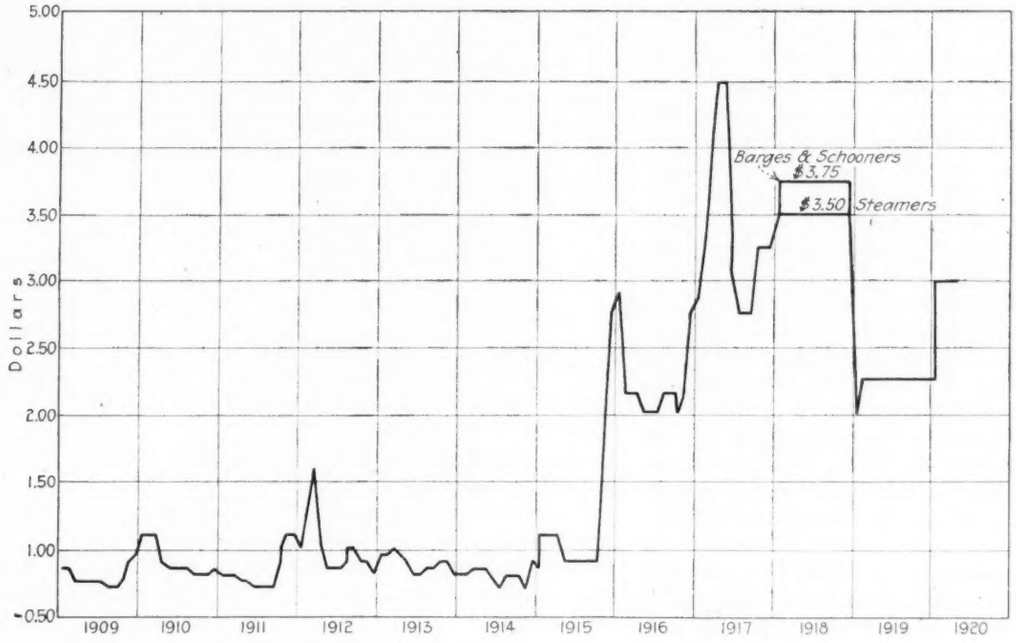


Fig. 4

Freight rates by water on bituminous coal from Baltimore to Boston, in dollars per gross ton.

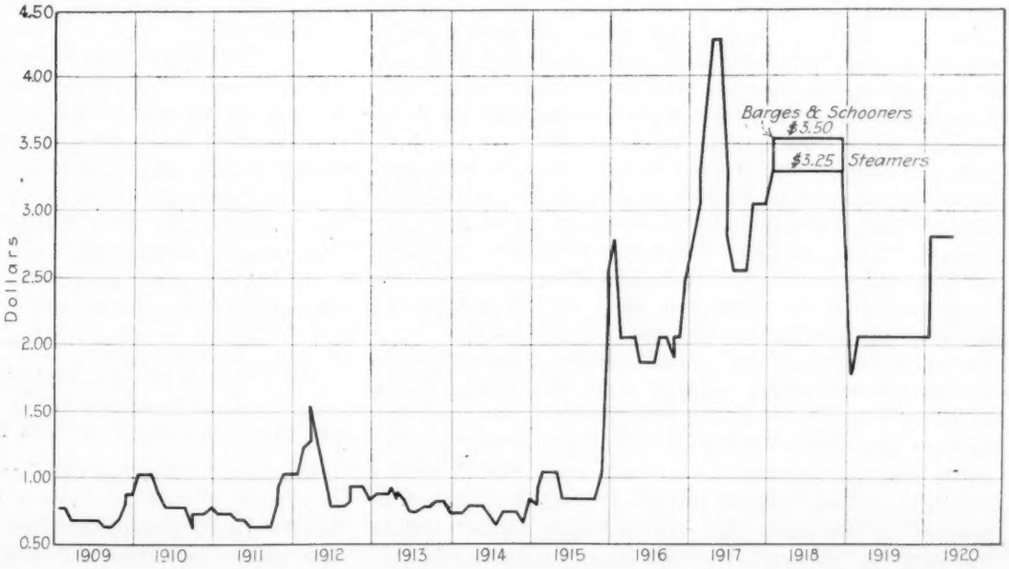


Fig. 5

Freight rates by water on bituminous coal from Philadelphia to Boston, in dollars per gross ton.

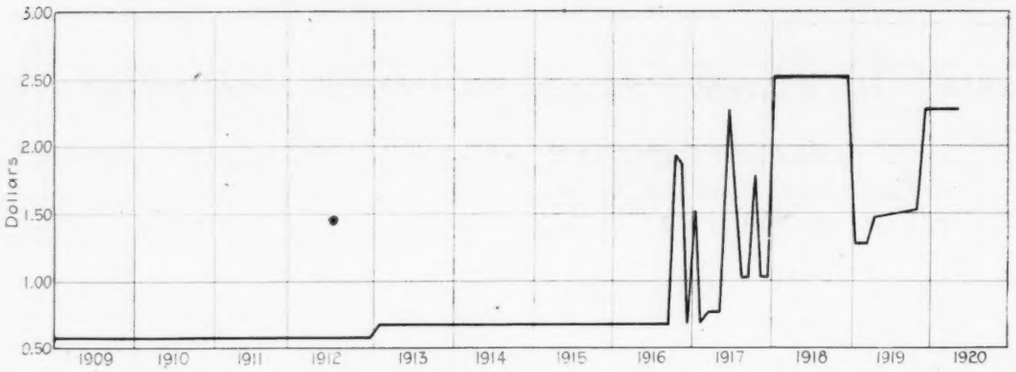


Fig. 6

Freight rates by water on bituminous coal from New York Harbor to Boston, in dollars per gross ton.

of $1.88. Unofficial estimates of the increases in freight rates contemplated for Sept. 1 are $1 for all-rail movement and 50c. for shipment by water to Hampton Roads, which will reduce the present differential in favor of central Pennsplvania of $1.88 to $1.38. In a similar way the rates have changed on coal to other New England consuming centers, figures of which for Worcester and Portland are given in the accompanying table.

The diagrams show the history of the changes in both rail and water rates to Boston from the several coal fields which normally supply this market. The figures for all-rail rates to Boston are those over the Boston & Maine. Prior to Dec. 3, 1918, there were no joint rates on bituminous coal from the mines in the Cumberland-Piedmont and Fairmont regions (Fig. 2) to Boston & Maine points, a through rate being obtained by adding to the Baltimore & Ohio rate the local rate of the Boston & Maine, which on shipments to Boston was 90c. per gross ton from November, 1917, to June 24, 1918, and $1.30 per gross ton from June 25, 1918, to Dec. 2, 1918. Prior to June 25, 1918, there were no joint rates on bituminous coal from the Clearfield district (Fig 1) to Boston & Maine points, a through rate being obtained by adding to the Pennsylvania R.R. rate the local rate of the Boston & Maine, which on shipments to Boston was 85c. per gross ton, Jan., 1908, to June, 1917, and 90c. per gross ton from July, 1917, to June 24, 1918.

Cargo rates on bituminous coal in dollars per gross ton are shown from the ports of Hampton Roads, Baltimore, Philadelphia and New York to Boston, in Figs., 3, 4, 5, and 6. These figures do not include marine insurance or handling charges at the terminal. Quotations for New York Harbor are from the piers at South Amboy, Perth Amboy, Elizabethport, Port Johnson, Hoboken, Port Reading, St. George, Weehawken, Guttenberg and Edgewater. The rates shown on this diagram (Fig. 6) for the years 1909 to 1917 inclusive are from the published tariffs of the Lehigh Valley Transportation Co., which rates are considerably lower than the open-market rates. For October and November, 1916, and for January, June, July and October, 1917, the rates shown on this diagram are the open-market quotations. For 1918 and 1920 the rates are those established by the Railroad Administration.

The fact that coal can be laid down in Boston at rates so much lower when shipped from the Pennsylvania fields by rail than when transported by water from any of the Eastern tidewater ports accounts for the fact that New England is today under-contracted for tidewater coal and over-contracted for all-rail delivery—over-contracted in the sense that the railroads cannot deliver through the gateways the coal from Pennsylvania that New England consumers would like to have. When demand for coal was slack last year, New England more or less abandoned the water route and today is suffering because of that course of action.

Decision Rendered in Tidewater Demurrage Case

THE Interstate Commerce Commission has rendered a decision in the complaint of the Wholesale Coal Trade Association of New York, Inc., et al., vs. the Director General of Railroads, as agent of the Baltimore & Ohio Railroad Co., et al. The complaints alleged that the demurrage charges and rules in effect since Nov. 11 1918, on coal held at Baltimore, Md.; Philadelphia, Pa., and at certain points in the vicinity of New York, N. Y., for transshipment by water beyond were and are unreasonable, unjustly discriminatory, and unduly prejudicial.

In its decision the commission held that:

(1) The demurrage charges assessed on tidewater coal from Nov. 11, 1918, to March 2, 1919, both inclusive, were not unreasonable.

(2) The demurrage charges assessed between March 3, 1919, and March 31, 1919, both inclusive, were unreasonable to the extent that they exceeded charges based upon five days' free time and a demurrage of $2 per car per day, and that the charges and free-time rule in effect since March 31, 1919, have been and are reasonable.

(3) The monthly period for adjusting credits and debits under the average agreement was not and is not unreasonable.

(4) The difference in treatment accorded the complainants and the Lake-port shippers does not constitute a violation of section 3.

(5) The tidewater regulations are not unduly prejudicial to the smaller tidewater shippers.

(6) The record does not justify a departure from the general rule with respect to denying relief from demurrage charges which accrued during strikes.

(7) Reparation awarded or collection of undercharges waived to the basis above found reasonable.

W. T. Thom, Jr., has resumed his work in the division of mineral fuels of the Geological Survey after having devoted a number of months to relief work in Austria.

William S. Murray has been made chairman of the engineering staff which will report on the Baltimore-Washington super-power plans. For the prosecution of that study the survey will open offices in New York City.

Discussion by Readers

Edited by
James T. Beard

Safe and Sane Practice in the Handling of Explosives

HAVING been employed as a powder demonstrator for a considerable time, I was naturally interested and pleased to note the discussion of some of the unsafe practices common among miners. Let us strive for more safe and sane methods in the use of explosives in mining.

The letter of a mine foreman of McKeesport, Pa., which appeared in *Coal Age*, July 1, p. 24, threw light on many of the dangerous habits and performances of the average coal miner. In addition to those he has mentioned, I will enumerate some in my own experience that are the cause of many fatalities in our mines due to the careless or reckless handling of explosives.

1. Miners making up their cartridges with a flame lamp in their cap, in direct violation of the state mining law.
2. Cutting off or shortening the match on the end of a squib, or dipping in oil before placing it in the hole, for the purpose of making it burn quicker.
3. Forcing a cartridge into a hole of too small a diameter and running the risk of breaking the cartridge and scattering the powder.
4. Using a steel or iron tamping bar when charging and tamping a hole.
5. Attempting to withdraw a charge or to mine out a shot that has misfired.
6. Attempting to thaw a frozen dynamite cartridge over an open light or by placing it on a hot steam pipe.
7. Cutting too short a length of fuse.
8. Crimping a detonating cap on the fuse by biting it with one's teeth.
9. Returning to the face to ascertain the reason why a shot did not explode.
10. Leaving explosives lying about on the gob or on the ribs or timbers where it is exposed and liable to cause an accident.

Safety Rules and Regulations Disregarded

Although the mining laws make many provisions to safeguard the lives of workers in mines, men are constantly taking chances. Many appear to be wholly oblivious to danger. Only a short time ago, a miner stepped on the cage at one of our mines here, to be lowered into the mine. On his shoulder he carried a 25-lb. keg of powder. He was at once followed by a short man who had a flame lamp on his head. The latter would have stood directly under the projecting keg, but for the warning cry of the cager who saw the danger in time to avoid disaster.

The McKeesport writer evidently took it for granted that the mention of the use of the "drillings" of a hole made into cartridges for tamping, referred to by a previous writer, had reference to coal cuttings. But such was not the case, as the drillings were stone dust, which made safe material for tamping a charge of powder.

The statement that some superintendents and foremen "shut their eyes" to practices they know to be dangerous is contrary to my experience. No one feels worse than the mine foreman when an accident occurs in the mine and no one tries harder than the foreman to prevent such an occurrence. As a rule the superintendent, though not as closely associated with the men, is equally anxious to make the mine safe at all times and would not stand for any practices that are unsafe.

Miners accustomed to handling explosives fail to realize the terrible force pent up in the innocent looking stick of dynamite or a cartridge of black powder. If they did they would use more care in handling those agents of destruction. Let us strive by moving-picture demonstrations and safety-first meetings, to educate our miners to the need of greater caution in the use of all explosives. So large a number of the men now employed in our mines can neither read nor write, the use of pictures and practical demonstrations are more needful than textbooks for them.

It has been estimated that there are sixty fatal accidents from the use of explosives in the anthracite mines alone, each year. Could we follow, in our minds, these sixty bodies to the grave and witness there the heart-rending scenes that follow, it would serve to impress on us the importance of this feature in coal mining.

Plains, Pa. RICHARD BOWEN.

Use of Cofferdams in Wet Shafts

WHILE the suggestion of Charles F. Sherman to encircle a wet shaft with water rings, at frequent intervals, and connect each ring with a drillhole cased with a four-inch pipe, as explained in *Coal Age*, June 17, p. 1279, is a good plan, it only applies to a shaft making water throughout its entire depth. Where the water comes from water-bearing strata at certain points in the shaft, however, it is better to adopt another plan, known as "coffering."

More properly described, this method consists of building one or more cofferdams for the purpose of completely shutting off the water from the shaft. The plan has the advantage of eliminating the necessity of pumping the water from the bottom of the shaft to the surface. My experience with boreholes conducting the water to the shaft bottom is that they frequently become clogged and require the use of boring tools to clear them out again, which is generally a difficult operation.

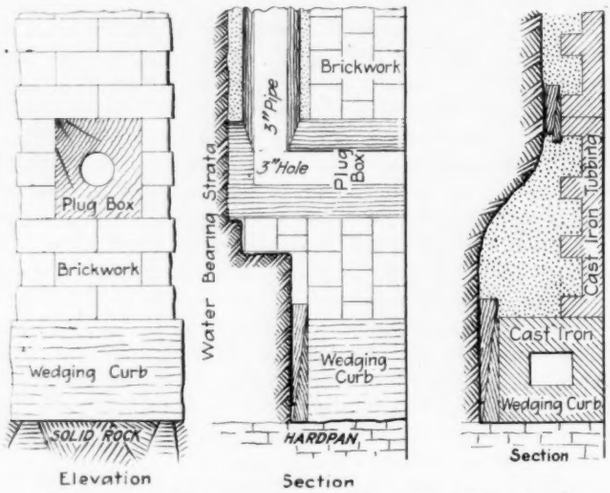
"Coffering," as I prefer to term it, is a simple and effective means of shutting off the water, particularly if the water-bearing strata lie comparatively near the surface, so that the pressure on the dam or shaft curbing is fairly light. Briefly described, the process is as follows:

The excavation in the shaft must be continued to a point where a strong shale or hardpan impervious to water is struck. At that point, the excavation is

widened all around the shaft, and the rock leveled off to form a solid ledge, which is to be the foundation of a wedging curb. It may be necessary to temporarily support the wet strata while building the cofferdam, which is started by laying the wedging curb in place on the rock ledge mentioned.

The wedging curb is 18 or 20 in. in width and 6 or 8 in. in depth, according to the size of the shaft and the thickness of the water-bearing strata. It consists of blocks of strong wood, cut to the circle of the shaft and fitted neatly together so that when put in place they can be wedged tightly from behind with soft pine wedges, as shown in the figure.

On this curb as a foundation, a walling of three or five courses of brick is laid, as shown in elevation and in section in the accompanying figure. These courses



SHOWING ARRANGEMENT OF PLUG-BOXES AND WEDGING CURBS

are laid in such a manner as to break joints both horizontally and vertically. The best quality of brick must be used and laid in a good hydraulic cement. In order to care for the flow of water while this wall is being built, it is sometimes necessary to insert a few plug-boxes. These are formed of blocks of wood 21 in. in length and 10 in. square in section. A three-inch hole is bored in the center of the block, to within two inches of the other end. Another three-inch hole is then bored from the top surface of the block to meet the first.

In order to keep the opening clear and drain off the water, which would otherwise wash out the cement before it could set, a wooden pipe is extended upward from the hole in each plug-box, behind the brick wall. This pipe is perforated with small holes to permit the water to drain into the pipe at intervals of three inches. As the wall is carried up three or four courses, these small holes are stopped with wooden plugs. The space around each pipe and behind the wall is now rammed with a loam or clay. The wall is then carried up another three or four courses and the same operation continued. This is repeated, until the water-bearing strata is passed. Where there is a considerable flow of water through the plug-boxes, it will be necessary to construct a temporary water ring to prevent the washing out of the cement from the brickwork below.

It should be mentioned here that the bricks in the walling of the shaft are all laid as stretchers, there being no headers at any point in the wall. The purpose of this is to prevent the leakage of water which would take place through the headers if these were laid. In order to break the horizontal joints, it is necessary to use bricks of one-half the thickness, in laying the middle row of brick in the first course when a wall of three bricks is being laid. If the wall is five bricks thick, half-bricks must be used in laying the first course of two of the alternate rows. After this first course, all bricks are laid of full thickness in each row. Finally, when the cofferdam is complete, in height, each of the wooden pipes behind the wall is filled with a grouting of cement, the hole in the plug-box being stopped with a plug of soft pine.

Where a heavier flow of water is encountered at a greater depth and giving a greater pressure, a process known as tubbing is employed. In this case, a heavier wedging curb is laid on a strong ledge of solid rock. This wedging curb may be constructed of cast-iron blocks. Instead of the brick walling built above the wedging curb, cast-iron tubbing is used in sections, as indicated on the right of the figure. Each of the series of tubs is tightly wedged with soft pine blocks driven behind, as indicated in the figure. As each layer of tubbing is put in place and wedged, the space behind is rammed with concrete.

Oak Hill, W. Va. WILLIAM DICKINSON SR.

More Labor Is Employed in Mines Mechanically Equipped

PERMIT me to refer to the letter of R. T. McKeen, *Coal Age*, July 1, p. 24, in which he cites a statement made by Floyd W. Parsons in the *Saturday Evening Post* of May 22 when, speaking of the attitude of labor toward the introduction of labor-saving devices and equipment, he remarked:

> They . . . know that the substitution of mechanical means for doing things has not only reduced the physical effort of labor, but has actually created vastly more jobs and higher wages.

In reply to the question asked by Mr. McKeen as to whether this statement of Mr. Parsons will hold good in respect to the coal-mining industry, let me say that it should apply to coal mining to the same extent as to any other industry except, perhaps, that of farming. Next to farming, the production of fuel is certainly a very vital part of our civilization.

Have not the ranks of coal miners been equally scattered and depleted through the war, the tide of emigration to Europe on the one hand and the ebb of immigration to this country on the other. For these reasons it became necessary, in order to increase production and secure greater efficiency in mining coal along side of a more favorable competitor, to use mechanical means for loading and marketing the coal.

If it is argued that there is plenty of labor to do everything required through sheer physical effort, it is nevertheless true that there are still plenty of jobs and plenty of work for everybody. The only difference is that there was more coal produced through the use of mechanical equipment, which should put cheaper fuel on the market. However, whether the coal is mined by machine or by hand, it does not appear to be a part of the producer's program to create a supply that will fully meet the demand.

Notwithstanding all that may be said, there is, today, the same prejudice in the ranks of labor opposed to the installation of machinery. Labor has not laid aside the antiquated reasons that have always prevailed among

its class. In respect to mining machinery, there is the fear of the loss of the few cents per ton that is the differential between pick- and machine-mined coal.

When it is explained that more coal is produced with less physical effort and more wages earned, the reply is, "We will not get the cars to load the coal mined." which is sometimes true. It would always be the case, if the management did not carefully plan and arrange the distribution of cars and men so as to keep both the machines and the men working on a 100 per cent efficiency basis.

Mr. McKeen asks, "If, in any instance, there was a decrease in the number of men employed, following a mechanical installation at a mine, how long a time elapsed before the number again reached the pre-machinery period?" In my experience I have never observed a decrease in the number of men employed in the mine, following an installation of machines. Instead, I have observed that where additional labor was available is was possible to actually increase the number of men over that employed previously.

Coal operators investing in mining machinery have an acreage to mine that warrants making the investment, and their guiding thought is *increased production.* Especially is this true at the present time. I have particularly observed that, at some of the most modernly equipped mines in the United States, usually the chief problem is the shortage of labor. It may not be as acute as with some of the pick mines, but the machine mines are always able to handle more labor and require more miners and loaders.

Formerly, when our social system was more balanced and producers were more earnest, rational and willing, conditions were the same. Unless there were car shortages, strikes or other abnormal disturbances in the ranks of labor, the majority of the better equipped mines were always able to increase their force of miners more readily than other mines.

As previously stated, I have never noted any decrease in the number of men employed because of the installation of machinery, except in a few instances where men have left the mine, not being able to overcome their prejudice against the machines. The installation of machinery, particularly at the present time, will not cause a decrease in the number of men employed, since every modern mine requires the best equipment obtainable to increase its production. Otherwise, of what avail would it be to invest so much capital?

Thomas, W. Va. W. H. NOONE.

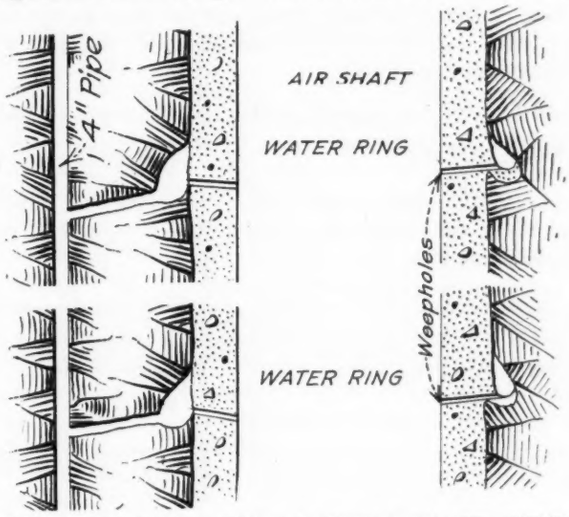
Water Rings in a Shaft Lined With Concrete

HAVING seen several shafts sunk through varying strata that, at times, contained much water, I was naturally interested in the proposition of Charles F. Sherman, in regard to taking care of the water he expected to meet in the sinking of an air shaft, *Coal Age*, June 17, p. 1279. If I am not mistaken, Mr. Sherman's proposition, was to sink a 4-in. borehole at a distance of 4 ft. from his shaft curbing and connect it with water rings established at frequent intervals in the shaft.

While this proposition is a good one, in my opinion, it may give some trouble from the freezing of the drain pipes and water rings in the winter season. The suggestion I would make is one that may prove a little expensive at the start, but will certainly pay for the investment by eliminating the trouble from freezing.

The plan I have in mind is to line the entire shaft with a good concrete curbing of sufficient thickness to withstand the pressure from behind. Then, as the work of lining the shaft proceeds, water rings should be established at points in the shaft where it appears the strata carry the most water. At such points, sufficient excavation should be made to provide a good water ring behind the concrete walling and surrounding the shaft. The water ring should be given an inclination that will insure its draining easily to the point on the side where the borehole is located. The pipe connecting the water ring with the borehole should also be given a steep inclination so that the water will run freely into the borehole and be conducted to the bottom of the shaft.

Each water ring or trough must be lined with concrete, the same being joined with the concrete of the shaft curbing. It will be well to leave at the lowest point of each water ring a small temporary weephole from which any accumulated water can drain into the shaft. When the work is complete, these holes can be tightly closed with plugs. Their purpose is merely to safeguard the shaft against the accumulation of water



CROSS-SECTION OF SHAFT SHOWING WATER RINGS BEHIND THE CONRETE CURBING

behind the curbing in case the borehole for any reason becomes choked so that it does not drain into the sump, which is a remote possibility.

The concrete curb must have a sufficient thickness to withstand any pressure that might result from the water gaining a head behind the shaft wall. Only the best grade of hydraulic cement must be used in the entire work. It will be observed that the borehole, however, will prevent the water from forming a head as long as the hole is kept clear.

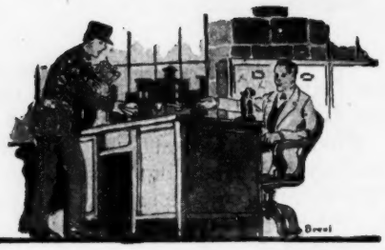
In making this suggestion, my idea is that the concrete walling of the shaft will not only support the strata but furnish a good protection against the freezing of the water in the water rings and drain pipes around the shaft. At the shaft bottom, the water is collected in a sump and pumped to the surface; or the borehole can be used as a column pipe to supply water to a spraying system in the mine entries, should this be thought desirable. The great advantage of a concrete shaft lining is that it is permanent and makes a clean dry job that eliminates the chance of future trouble by freezing or the decay of the shaft timbers.

Johnstown, Pa. S. W. F.

Inquiries of General Interest

Answered by

James T. Beard



Yield of a Steam Jet and Fan Working Together on the Same Air

REFERRING to the issue of *Coal Age*, June 10, p. 1213, permit me to draw attention to the method of solving the second question asked on that page. The question reads as follows:

A steam jet and a fan, both acting together on the air in an upcast shaft, produce 75,000 cu.ft. of air per minute. When the fan is stopped the jet produces 15,000 cu.ft. per minute. What quantity of air should the fan give alone?

In the answer given to this question it is stated "The cube of the total quantity [of air] circulated by the combined action of the fan and the steam jet is equal to the sum of the cubes of the respective quantities circulated by each of these agencies acting alone." Then, if the jet acting alone will produce 15,000 cu.ft. per min., calling the required yield of the fan when acting alone x, gives

$$75{,}000^3 = x^3 + 15{,}000^3; \text{ and } x^3 = 75{,}000^3 - 15{,}000^3$$

$$x = 1{,}000\sqrt[3]{75^3 - 15^3} = 74{,}800 \textit{ cu.ft. per min.}$$

But, in Fairley's "Ventilation of Mines," I find the following statement of a similar problem, which reads as follows:

If we obtain a certain quantity [of air] by a furnace and another [quantity] by a steam jet or other means, the combined effect will be according to the square root of the square of the one added to the square of the other. For example, if a mine circulates 25,000 cu.ft. of air per minute by a furnace alone and 22,000 cu.ft. by a steam jet alone, the quantity of air that will pass with the two acting together will be:

$$\sqrt{25{,}000^2 + 22{,}000^2} = 33{,}300 \textit{ cu.ft. per min.}$$

Again, in a "Reference Book for Colliery Managers," by W. Wardel, appears the following:

If the furnace and steam jet combined produce 46,706 cu.ft. per minute, and the furnace alone, 42,670 cu.ft. per minute, what will the jet acting alone produce?

The solution given to this question in the book just mentioned is as follows:

$$\sqrt{46{,}706^2 - 42{,}670^2} = 18{,}993 \textit{ cu.ft. per min.}$$

Now, according to these authors, the solution given to the question in *Coal Age* brings too large a result. Applying the square-root method, the yield of that fan when working alone would be

$\sqrt{75{,}000^2 - 15{,}000^2} = 76{,}485$ cu.ft. per min., instead of 74,800. Kindly explain the difference.

Connellsville, Pa. W. G. DUNCAN.

The difference in these two methods lies in the question of whether we are to consider the *power* on the air or the *pressure* as remaining constant or the same when the fan is working alone, the steam jet alone, or both are working together. It is quite apparent that the pressure due to the mine resistance will change when a mine is passing different quantities of air; and it is therefore an error to regard the pressure as being the same in each of these three cases.

On the other hand, it is reasonable to assume a constant power applied to the air, under the same conditions of the speed of the fan or the quantity of steam issuing from the jet, whether these means of ventilation are working separately or together. On this basis, the solution given in *Coal Age* is correct, since the quantity varies as the cube root of the power on the air. Attention was drawn to this in the introductory page of Ventilation of Mines, by J. T. Beard, published in 1894.

Mercury vs. Glycerine Barometer

KINDLY explain the difference in the readings of the mercurial and the glycerine barometers. When the mercurial barometer shows a reading of 30 in. what will be the reading of a glycerine barometer?

Benton, Ill. STUDENT.

The specific gravity of mercury is 13.56, while that of glycerine, at the same temperature (60 deg. F.), is 1.265. Therefore, since the heights of these two columns of liquid are inversely proportional to their densities, the height of the glycerine column corresponding to 30 in. of mercury is $(30 \times 13.56) \div 1.265 = 321\frac{1}{2}$ in., or 26 ft., $9\frac{1}{2}$ in.

Approaching Water Under a Great Head

CAN it be true, as I have heard it said, that there is less danger in driving a place toward old abandoned workings filled with water under a great head, than when the head is known to be small? It has always been my understanding that the greater the head the greater will be the pressure on the face of the coal which would increase the danger of driving such places.

Spring Valley, Ill. STUDENT.

The answer to this question is very similar to that asking why it is safer to work around live wires carrying a high voltage, than when a low voltage is employed. There can be no doubt that the danger is greater when one comes in contact with a wire carrying a high-potential current than where the pressure is lower. Likewise, the pressure due to a great head of water is liable to be more destructive than when the head is less.

However, it cannot be denied that workmen in either case will use greater precaution in face of a greater danger; and, on this account, it is quite generally conceded that this greater caution on the part of the workers reduces the danger and makes it actually less than when the men become careless, believing that the danger to which they are exposed is small.

It can also be said that a great head of water will reveal the near approach to danger by the increased seepage of water through the seam and the inclosing strata. By this means, the men are warned more quickly than where the pressure head is not sufficient to force the water through the strata.

Examination Questions

Answered by

James T. Beard

Miscellaneous Questions

(Answered by Request)

Ques.—Find the horsepower required to raise, in three minutes, a car weighing one ton and containing one ton of material, up an incline 1,000 ft. long and pitching 30 deg., if the rope weighs 1,500 lb.

Ans.—Since the sine of 30 deg. is 0.5, the rise of this incline is 1,000 × 0.5 = 500 ft. A rough estimation of the work performed, in this case, would be to ignore friction and assume the total weight of the car, material and rope is lifted through a vertical height of 500 ft. in 3 min. The total weight being 2 × 2,000 + 1,500 = 5,500 lb., the required horsepower is (5,500 × 500) ÷ 3 × 33,000 = 27.7+ hp.

Ques.—(a) How much firedamp would have to be given off to foul a current of 6,000 cu.ft. of fresh air per minute, sufficiently to allow the presence of gas to be detected by the flame of a safety lamp? (b) Without further fouling this current, what is the shortest time in which it would be possible to remove a body of undiluted gas completely filling a pair of entries, each 300 ft. long, with four crosscuts, each 60 ft. long, both entries and crosscuts being 5 ft. high and 8 ft. wide?

Ans.—(a) A good fireboss will be able to detect gas, with an ordinary Davy lamp burning cottonseed or lard oil, when 2 per cent of gas is present. In that case, the pure air (6,000 cu.ft. per min.) is 98 per cent of the return current of gas and air. The volume of the return current is, therefore, 6,000 ÷ 0.98 = 6,122 cu.ft. per min. The quantity of methane that must be given off to produce this condition is then 6,122 — 6,000 = 122.3 cu.ft. per min. (b) The second part of this question is somewhat peculiar and indefinite. We assume, however, the meaning: Given a known volume of pure, undiluted methane, to determine how long it would take a fresh air current of 6,000 cu.ft. per min. to remove this quantity of gas, without the proportion of gas in the return exceeding 2 per cent.

The volume of pure gas filling the two entries and four crosscuts is 5 × 8 (2 × 300 + 4 × 60) = 33,600 cu.ft. If this gas forms 2 per cent of the return current, the time required for its removal would be 33,600 ÷ 122.3 = say 275 min., or 4 hr. 35 min.

Ques.—In sinking a shaft, how many long tons of rock can four men raise with a windlass in eight hours, from an average depth of 60 ft., the bucket being unbalanced and each man being able to do 1,400 units of work per minute in raising stone?

Ans.—Each man performing 1,400 units of work, the four men would perform 4 × 1,400 = 5,600 ft.lb. of work. Assuming three minutes per hoist, the work performed per hoist is 3 × 5,600 = 16,800 ft.lb. The weight hoisted is then 16,800 ÷ 60 = 280 lb. The number of hoists in 8 hours is (8 × 60) ÷ 3 = 160; and allowing, say 70 lb. for the bucket, the weight of material hoisted is 160 (280 — 70) ÷ 2,240 = 15 long tons.

Ques.—It is proposed to work a pump that it is estimated will require 23 hp. to drive. Give particulars of size of motor and dimensions of cable, assuming the pump to be 1,300 yd. from the dynamo.

Ans.—Allowing for the return current, the length of transmission is 2(3 × 1,300) = 7,800 ft. Also, assuming the efficiency of the motor driving the pump to be 90 per cent, the input to the motor is (23 × 746) ÷ 0.90 = 19,064 watts. Then, assuming the pressure at the end of the line as 500 volts gives, for the required current 19,064 ÷ 500 = 38.128 amp. Finally, allowing for a linedrop of, say ten per cent, in transmission, the size of wire required to deliver a current of 38.128 amp., under a pressure of 500 volts, at a distance of 3,900 ft. requiring a total length of wire of 7,800 ft., including the return, is

$$A = \frac{10.8 \times 7{,}800 \times 38.128}{500 \times 0.10} = 64{,}230 \; circ.mils.$$

Ques.—Give six reasons why the great majority of steam boilers are cylindrical or round shape.

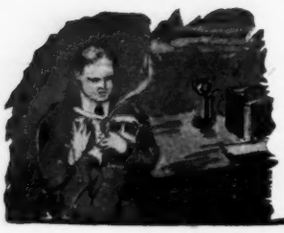
Ans.—Assuming that this question has reference to fire-tube boilers, the following reasons may be given: 1. The cylindrical shape lends itself more readily to ease of construction, which makes it cheaper. 2. The cylindrical shape develops more uniform stresses in the shell of the boiler, which makes it safer. 3. The cylindrical shape permits a more uniform distribution of heat, which accelerates the generation of steam. 4. A cylindrical boiler permits of less time and expense in the setting of the boiler, which makes it generally popular. 5. A boiler of cylindrical shape is more easily cleaned than any other type of boiler. 6. The cylinder is the only practicable form of construction outside of water-tube boilers.

Ques.—Having to deliver 200,000 cu.ft. of air per minute from a fan and assuming 13 cu.ft. of the air weighs one pound, what would be the energy of the discharge into the atmosphere, through a chimney 4 × 5 ft. and through a chimney 20 ft. square, respectively?

Ans.—Energy is measured in foot-pounds and is found by multiplying the weight of air delivered, in pounds, by the square of its velocity, and dividing that product by twice the force of gravity, both the velocity of the air and the force of gravity being estimated in feet per second. In this case the weight of air delivered is 200,000 ÷ 13. The area of the smaller chimney is 4 × 5 = 20 sq.ft., which gives a velocity of 200,000 ÷ (20 × 60) = 500/3. Therefore the air discharged through the smaller chimney has an energy of

$$\frac{200{,}000}{13 \times 2 \times 32.16}\left(\frac{500}{3}\right) = 6{,}644{,}000 \; ft.\text{-}lb.$$

The area of the larger chimney is 20 × 20 = 400 sq.ft. and the velocity of the discharged air is therefore $\frac{1}{20}$ of that in the smaller chimney. Since the energy varies with the square of the velocity, the energy in the larger chimney will be $\frac{1}{400}$ of that in the smaller chimney, or 16,610 ft.-lb.



Readers' Views and Comments

Insists That Railroads, Not I. C. C., Must Solve Coal-Shortage Problem

Commenting on the testimony delivered by me before the Interstate Commerce Commission in connection with Car Service Order No. 7, July 8, 9 and 10, *Coal Age*, p. 118, says:

He does not suggest just how the Interstate Commerce Commission should go about fixing for each railroad the amount of coal which it is to be responsible for, nor more particularly how to care for the roads that have no coal traffic originating on them. These problems are believed to be relatively easy, however, it seems.

I have always felt a certain measure of hesitation in criticising a condition or in certain handling of same, unless I felt I could at the same time suggest a remedy. In this instance I made specific recommendations to the commission when I said:

The commission should *order the required measure* of coal transportation for each producing road to perform, which can be done by fixing the number of hours each week that each mine must be supplied with cars, loaded and empty coal cars to be moved in preference and at a rate that will serve to carry out the terms of the commission's orders. With respect to roads which do not serve mines but which deliver coal to the consumer either direct or as an intermediate carrier, the commission should exact a daily report of empty and loaded coal cars on each carrier's rails, the number of cars received from connections and delivered to connections, *the commission to enforce such general orders as it may issue, insisting on the executive officers of the individual railways performing the general task allotted them in their own way.* In substance, and insofar as possible, *re-establish the maximum measure of autonomy* for each railroad, *demanding that each railway executive answer to the commission and the public for his stewardship.*

I am still of the opinion that the stream of orders issued by the Interstate Commerce Commission or any other body, however able, will prove ineffective for the reason that such orders will be willfully disobeyed by a percentage of operating officials, ignored by others, misconstructed by another class and only obeyed fully and comprehensively by a relatively small percentage of the men they are addressed to. In addressing the commission I made the following further statement, which I believe to be an absolute truism:

The mines have a proven potential production in excess of 700,000,000 tons annually. Regardless of the fact that many mine workers have been driven to other lines of work through lack of employment, there are men enough left in the industry to get out all the coal required. *The shortage is one of transportation and not coal.* Any attempt to handle the detail of railway operation from a central point like Washington will fail. The job is too intricate; its complexion changes too frequently. The Interstate Commerce Commission can only act as an umpire between the railroads and the people and the railroads one with another. *Each railway's task in the matter of moving empty and loaded coal cars should be checked back to the chief executive of each railway as a duty to all the people that must be performed, he to judge what measure of partially essential or non-essential traffic or dispensable passenger service must give way to fuel. The transportation available after moving enough coal should be prorated as near as possible among the shippers as a whole. Where coal equipment is wrongly located the commission should order and enforce relocation, applying the penalty that the Transportation Act provides for non-fulfillment of orders issued by the commission.*

With the passing of each succeeding day without any material acceleration of coal transportation service, the task is becoming more serious, and sooner or later—perhaps too late—somebody, and maybe all of the people, will say to the railroads that the fuel necessities of the nation must be moved even though some of the luxuries be pushed into the background.

Sincerely yours,

EUGENE MCAULIFFE.

Cites Savings in Use of Alternating Current For Coal Cutters

The article by Charles B. Officer in your issue of June 24 brings out very clearly the advantages of using alternating current for coal cutters. Having installed three plants of this character within the last six years, I have had considerable experience in this direction and find that the opposition which was first made to alternating current is gradually disappearing, because the safety of transmission of high voltage in protected cables has been fully vindicated in the installations I refer to, two of which are in the McAlester (Okla.) field and the third at Valier, Ill.

The only difference between the Valier and the Nokomis installation is that Valier uses 25-kva. transformers against the 75-kva. size at Nokomis. This makes a very mobile equipment and also shortens the length of secondary wires.

Coal operators are primarily interested in equipment if it effects a saving, and the experience at Valier has indicated that the use of alternating current for the motors, both above and below ground, with synchronous motors on the motor generators producing direct current for mine locomotives, effects a very material saving compared with a plant operating under the same conditions but converting all of the current into direct current at the top of the shaft.

An investigation discloses that one of the best electrically-operated mines, purchasing power at the same rates as the Valier Coal Co. and producing about the same daily tonnage, but converting all of the current into direct current at the top of the mine, has a purchased power cost of 5c. a ton and 1c. a ton for attendance and material in maintaining the large motor generator set.

The power cost at Valier, however, with the hoist loaded only to one-half of its normal production, is 3c. a ton with practically no expense for the upkeep of transformer stations. With the present output of 3,000 tons per day the saving in power alone is at the rate of $60 a day.

It occurred to me that these figures, which are representative, would be of interest to your readers contemplating installation of equipment, especially in the larger mines.

Yours very truly,

CARL SCHOLZ.

Coal Shortage Is Explained by the Railroads

Daniel Willard Reviews Car Deficiency and Railroad Situation Before Interstate Commerce Commission — Reconsignment Privilege Abused, According to Willard and McAuliffe — Zoning System Not Considered Necessary Yet

THE voluminous record made by the testimony taken by the Interstate Commerce Commission in the matter of supply, exchange, interchange and return of open-top equipment is regarded as a document replete with interest and of great value to those interested in the transportation of coal. Some very interesting points were brought out by Daniel Willard, president of the Baltimore & Ohio Railroad Co. Among his observations were the following:

When the railroads were taken over by the Federal Government January 1, 1918, they had roundly 2,250,000 cars. Of that number of cars 5.7 per cent were reported in bad order. When the railroads were given back to the owners, March 1, 1920, there were turned over 2,360,000 cars, with 6.7 per cent in bad order.

There were 100,000 more cars than when the Government took them over, but there were 25,000 more bad-order cars. During private control it has been customary for the railroads to buy as many cars in each twelve months as the Government bought in twenty-six months, and still at the end of Federal control there were as many more cars on the railroads as the number that the Government bought. Something like 80,000 to 100,000 freight cars wear out and must be scrapped each year. During the period of Federal control this was not done by the Government. They were kept in service, but their condition was not such as to fit them for average service. Many cars were marked to carry cinders and other like materials. They had become incapacitated for ordinary commercial work.

Necessary to Reduce Bad-Order Cars

It is going to take six months or a year for the railroads to get the percentage of bad-order cars down to 4 per cent, where I think it ought to be. Every additional 1 per cent of cars out of service means 25,000 cars.

The highest mileage made per car per day on the American railroads was in 1916, when they made an average of 26.9 miles per day. During 1918, under Federal control, the average mileage was 24 and a fraction per day. A car is actually in trains and moving only 11 per cent of the time. Thirty-seven per cent of the total time of the car is at the disposition of the shipper. Thus 63 per cent, which includes the 11 per cent mentioned, of the total time of the car is under the control of the railroad.

The railroads can do a great deal to reduce the delays during their 63 per cent of the time. Incidentally 6 per cent of the time of the car is represented by Sundays and holidays. If the railroads, with the co-operation of the shippers, could increase the average miles per car per day just one more mile on the present basis of performance, it would add 100,000 cars, in effect, to our service. In times of active business demand, when there are no abnormal or interfering conditions, we should be able to make thirty miles per car per day. I believe we can accomplish thirty miles a day if we all work to that end. That would mean adding 300,000 cars to our equipment.

Carloads Larger Under Government Control

During the period of Federal control the average carload on the American railroads was higher than at any former period. It averaged twenty-nine tons. The average carload in the past has been twenty-five tons and lower. It has gone down to twenty-seven tons now. We have lost two tons on an average carload since the termination of Federal control. This tendency can be overcome if we all work together. An increase of one ton in the average load of all cars in the country would be equivalent to adding 80,000 cars to those available. The loss of two tons per car, in effect, withdraws 160,000 cars from the service. It is for the shipper to say what the carload will be. The railroad has very little to do with that. I am inclined to think that the engines available at the present time can move all business offered. I would not recommend the zoning system. I do not think the situation serious enough to require it.

During the remainder of the season it will be necessary to dump 4,000 cars of Lake coal per day. The assignment of that coal among the carriers in the same relative proportions as has been done in the past brings the task easily within their capacity. With the strike out of the way they will be able to do it.

Urges Waiver of Reconsignment Privilege

In periods such as the present shippers ought to forego the reconsignment privilege as much as possible. I have no criticism to make of that procedure under ordinary circumstances. While this shortage exists I think shippers should bill their cars through to the points where they are to be unloaded.

It is a generally held opinion that the testimony and exhibits of A. G. Gutheim of the car service committee of the American Railway Association formed one of the features of the hearing. Extracts from his testimony follow:

We are at a point where we have to make up a lost production of about 2,000,000 to 2,500,000 tons a week during April, May and a part of June. This is coupled with the fact that there are no stocks to speak of. Business is running at a tremendous rate. The road-building program, from the standpoint of money involved, is estimated to be three times as much as ever attempted before. The road-building activities are largely coal-car propositions.

Extent of Car Shortage Misunderstood

There is a very popular misconception as to the extent of car shortage. You hear it said that the mines have 30-, 40- and 50-per cent car supply. One hundred-per cent car supply does not mean a car supply sufficient to produce the coal that the country needs. It does not mean a car supply sufficient to bring out the maximum production that the country had during any sustained period such as the 13,000,000 tons produced just before the strike. When we explain that 100-per cent car supply, on the basis of present supply, we speak of potential production. If we get a 70-per cent car supply on a demand of 18,000,000 tons of coal, we load probably 12,000,000 tons of coal a week. That amount loaded each week now, if continued until we go into fall weather, would keep this country in good shape next winter. A 50-per cent car supply must not be construed as meaning 50 per cent of what the country needs, but 50 per cent of 70 per cent.

To get coal up the Lakes, it strikes me, you have one of three things to do. Either the Lake people must buy their coal and the operators must ship it at their own volition or you must have some authority over the distribution of coal in order to have some compulsion on the operators to make them ship on contracts. Thirdly, this commission must figure out whether or not under its priority powers it can assign cars to the benefit of Lake coal loading and say to the operators that these cars are here for Lake loading and must not be loaded elsewhere. This is substantially what was done in 1917 under Judge Lovett's orders.

There is great evil and great danger in handling situations to any great extent with assigned cars. It was done in 1917, first by force of circumstances by the Railroad War Board, then by the Fuel Administration. The Fuel Admin-

istration assigned so many cars for perferential loading that when Federal control began in 1918 there were no cars to assign on a good many railroads and there was no regular commercial distribution.

In the course of his testimony Eugene McAuliffe said:

I think the carriers have not been diligent in policing the distribution of coal cars to mines. It is not the duty of the operators to police that proposition. It is the duty of the carriers, and they are negligent in policing it. If they will exercise the same measure of activity which they employ in collecting the proper tariff rate they may be able to help the situation. The disposition of every operator has been to get cars and to get them at almost any price. The mere making of a misstatement has not restrained the operators from inflating their rating.

The privilege of reconsigning coal is grossly abused. There is no market situation that warrants two to ten reconsignments of coal in transit. Cars frequently are billed to fictitious consignees and destinations and thereafter reconsigned from one broker to another. Each levies a separate tax on the ultimate consumer and augments the difficulties of overcongested terminals. I think that the basis of the profiteering which obtains today very largely rests with that situation.

McAuliffe Advocates Zoning System

The re-establishment of the zoning system in force during the war period should be considered and restored through embargoes if found necessary to conserve transportation. Coal is moving from Illinois and Indiana to New York and to Toronto. Coal has been purchased in the western part of Illinois and moved through Indiana, Ohio and Pennsylvania, all heavy coal-producers, into markets as far east as the industrial area of New York City. I have in my possession an inquiry from a rubber company located on Long Island asking for coal in St. Louis territory. If coal were obtainable east of there, they would not ask for a relatively inferior product which has to move through three or four coal fields.

Dunsmuir Name Synonymous with Coal for Half-Century in Canada

JAMES DUNSMUIR, who died suddenly on Sunday, June 5, at his country lodge, Cowichan River, V. I., for many years was prominently identified with the coal-mining industry of British Columbia, having inherited extensive coal fields of Vancouver Island which were discovered and first operated by his father, the late Robert Dunsmuir.

HON. JAMES DUNSMUIR
Wearing Uniform of Lieutenant Governor of British Columbia

The name Dunsmuir has been synonymous with coal in western Canada for over half a century. The family is reputed to be worth many millions and the basis of the fortune was the coal of Vancouver Island.

James Dunsmuir was born at Fort Vancouver, July 8, 1851, the son of Robert Dunsmuir, one of the earliest pioneers of British Columbia. The elder Dunsmuir was the son of a Scottish coal master and was born at Ayrshire. Educated at Kilmarnock Academy, he married when a young man and set sail for the Pacific under the auspices of the Hudson's Bay Co. as one of a party employed to open up coal lands in the Fort Rupert district, Vancouver Island. This project not being entirely successful, he returned in 1854 to Nanaimo to assist in the development of the mines that afterward became the property of the Vancouver Coal Co.

In the course of prospecting on his own responsibility, however, he discovered and located what became known as the Wellington coal property. With others he proceeded with its development, finding a ready market for the product in the adjacent states, particularly in California. The Dunsmuir interests entered the field there in a large way, having their own steamships, wharves, bunkers, etc. Ultimately the late Robert Dunsmuir bought out his partners and before he died was the prime mover in the construction of the Esquimalt & Nanaimo Ry., in connection with which work he received a large grant of land, together with its coal and other minerals, on the southeastern coast of the island.

On succeeding to the estate James Dunsmuir took active charge of the business. He continued the policy of his father for years, enlarging the scope of his operations to meet the contingencies of the market. It was not until 1910 that he withdrew from personal control of the coal industry, in that year selling his collieries at Wellington, Comox and Alexandria to Messrs. Mackenzie and Mann, the prominent Canadian railroad contractors and owners. The consideration was reported to be $10,000,000. Subsequently he disposed of the Esquimalt & Nanaimo Ry. and the lands in connection therewith, placed at about 1,500,000 acres, to the Canadian Pacific Ry. The coal contained in the latter, however, was reserved and passed to the Canadian Collieries (D), Ltd., which concern is at present the largest single operator on the island.

Railway Heads Say Roads, Having Deficient Supply, Cannot Traffic in Coal

THE charge that railroads that own coal mines or that have mine contracts are taking all the bituminous coal possible and reselling it to dealers, making big profits because of the present scarcity of coal, is made in a statement issued July 13 by Ellis Searles, one of the organization of the United Mine Workers of America and the person who generally gives out the official statements from headquarters. "Present coal prices are the highest on record, but by no stretch of the imagination could the miners be held responsible for them," said Mr. Searles.

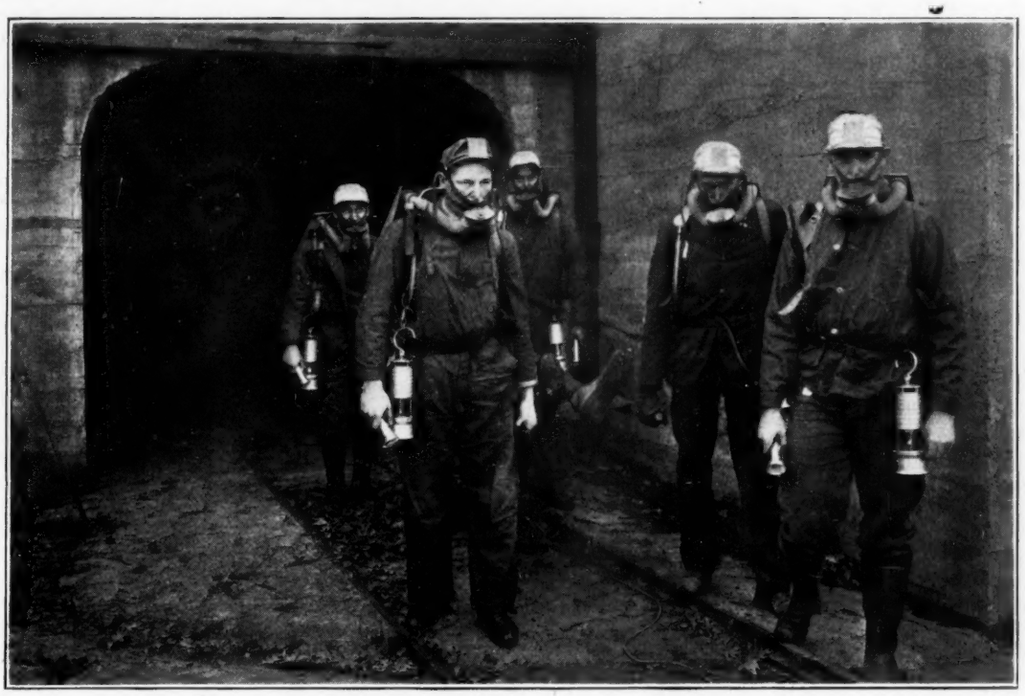
Officials of the Big Four and the Pennsylvania Lines say that the reports are untrue. According to an official of the Pennsylvania Lines not only is it illegal for the railroads to rsell coal but they could not do it even if they wished, for the reason that their own supply is insufficient to meet present needs.

International First-Aid and Mine-Rescue Contest

By F. J. Bailey
Assistant to the Director, Bureau of Mines

AS FAR as the million miners of the United States are concerned, the event of the year is the International First-Aid and Mine-Rescue Contest that will be held Sept. 9, 10 and 11 at Denver, Col., under the auspices of the Bureau of Mines. The contest will be open to all bona fide first-aid and mine-rescue teams connected with mining and metallurgical companies of the United States, Canada and Mexico, and prizes of gold medals, cups and banners will be awarded to the teams most proficient in the art of saving human life.

The miners' occupation being continuously filled with hazard, the rescue and first-aid teams at the mines are looked up to as leaders in a great cause and there is much local and regional pride in the proficiency of their men. The teams that come back from the Bureau of Mines contest with honors are greeted as conquering heroes by their communities.



Ready for Action

Type of rescue team maintained at many mines of the country. Men fully equipped with rescue apparatus and capable of meeting any emergencies in the mines.

With the advent of the trained rescue miner, wearing oxygen rescue apparatus, has come the trained first-aid man who takes the victom of a mine disaster and gives him the emergency aid that oftentimes is the difference between a dead miner and a live one, between a man disabled for life and one restored to the full use of his powers, or between a man deprived of his earning capacity and one who can support and protect his wife and children in comfort.

Today there are more than one hundred thousand men in this country trained by the Bureau of Mines in modern first-aid or mine-rescue work or both, all of them volunteers, ready to help their own or those in some other place, no matter where, for there is no distinction in the saving of the life of a fellow-man.

There is perhaps no other industry in the United States that has such hazards; there is no other industry that has such help from the Government. The Bureau of Mines maintains in this work ten fully-equipped mine-rescue cars with trained rescue crews that visit as many mines throughout the country as they can, training men in modern life saving, and now and then stopping their work to rush to a disaster and assist in a practical way in the saving of men from death. The bureau also maintains ten mine-rescue stations and five mine-rescue trucks that perform similar duties. In this work altogether the bureau employs fifty trained mine-rescue men.

There is such interest among the miners in these contests that teams in mining states have been busy all the summer in local and state contests preparing through competition for the big events. California, Kentucky, Alabama, Indiana, Oklahoma, Virginia, Iowa and West Virginia have all held meets and selected their best teams for the Denver meet. The Lehigh Valley Safety Division of Pennsylvania recently held a "No-Accident" week and picked out the best teams in that locality to partake in the contests in September.

Last year the contests of the bureau were held at Pittsburgh, Pa., with 108 teams participating. This year the entries close Aug. 26, and must be filed with the bureau at its Pittsburgh office. D. J. Parker, head of the rescue service of the bureau, will have charge of the meet.

One of the spectacular events will be a demonstration of the utility of the airplane in rescue work in quickly transporting engineers and oxygen rescue apparatus to the scene of mine disasters. While the mine-rescue teams are showing their proficiency on the field an alarm of a supposed mine disaster will be telegraphed or telephoned to the nearest airplane station of the U. S. air service. An airplane will be immediately

dispatched to bring Bureau of Mines men and apparatus to the field as quickly as possible. So many of the miners have been trained in rescue work by the bureau, there is unlikely to be much difficulty in promptly obtaining rescuers at a mine accident anywhere. The airplane will then be used in bringing engineers qualified to direct rescue work.

Another feature of the meet will be the formal presentation of gold medals to miners for deeds of bravery in saving life in the United States during the last three years. The awards will be made by Dr. Frederick G. Cottrell, Director of the Bureau of Mines, in behalf of the Joseph A. Holmes Association, of which he is also president. The gold hero medal is to be presented to four Western miners and to the nearest living relative of three others, who sacrificed their lives in their attempts to rescue fellow miners from death.

That the meet will cover the entire mining industry of the country is shown in the number of teams already entered, such as the Homestake Mining Co., Lead, S. D.; Lehigh Coal & Navigation Co., Lansford, Pa.; Keystone Coal & Coke Co., Greensburg, Pa.; Hailey-Ola Coal Co., Haileyville, Okla.; Union Pacific Coal Co., Rock Springs, Wyo.; H. C. Frick Co., Pittsburgh, Pa.; United States Fuel Co., of Indiana; State of Kansas First Aid Association; Temple Coal Co.; Luzerne, Pa.; St. Louis Rocky Mountain Pacific Coal Co., Raton, N. M.; the Colorado Fuel & Iron Co., Pueblo, Col., and the Huntington team of the Arkansas Mine Rescue Association.

Cushing Explains His Estimate of American Coal Situation

At Meeting in Washington American Wholesale Coal Association Passes Unanimous Vote of Confidence in Managing Director

WIDE publicity has been given to statements by George H. Cushing, speaking for the American Wholesale Coal Association, to the effect that there is no real coal shortage. This attitude has been severely criticized. This led the executive committee of the American Wholesale Coal Association, which met in Washington July 20, to consider, among other things, whether Mr. Cushing's position met their approval. The result was a unanimous vote of confidence in Mr. Cushing. As the publication of his views has been fragmentary, the following verbatim statement by Mr. Cushing may be of interest:

When I study the situation today I see that in many respects it is similar to what it was when F. S. Peabody came to Washington in 1917. That is, prices are high, the people are in a panic, and various official groups are taking a hand in trying to straighten things out.

The latter are trying to do now what they tried to do then—jockey the coal man into a position where he admits that it is all a question of price and to compel him to accept battle on that question. If we ever accept battle on that ground we are whipped before the fight starts. We cannot justify the spot market prices now prevailing in the East nor can any one name a price which will satisfy anyone else. Rather than try the impossible, I prefer to select our own battleground and compel the official group to fight upon it. I prefer, in a word, to put them on the defensive.

My first effort has been to try to make them justify their long-time program of regulation of the railroads. They have killed the railroads. I want the country to know it. I want to show that even they admit it.

My second effort is to make them justify their cry of coal famine. I want them to admit that they caused these prices by alarming the people without real reason.

Before I am through I am going to select two or three other available battlegrounds and make them fight upon them. If I can get them to accept battle all over the lot—and don't have to waste my efforts fighting the beneficiaries of my policy—the public will realize that there is something more than price involved in this coal question.

Coming now to my statement that there is no famine: I don't know whether there is or is not. *No one else does.* But if I assume there is a real famine, I face certain considerations which I have to explain, and which I do not want to be forced to explain. Also, I face certain consequences to the trade which I would do anything to try to avoid.

First—We coal people are admitting a famine at home and at the same moment are increasing our exports. If the famine is real, we have no right to export a point. Which position shall we take?

Second—The alleged shortage in New England is the result of a mistake in judgment on the part of the New England consumers. They guessed that the market was going down when it was actually going up. They wanted a more opportune time to buy. Now that they are caught on the short side of the market they have organized a political cabal to come here and have the consequences of their mistake removed by governmental action. If we accept their solution of the difficulty, we invite politics into the coal business as a long-time proposition to correct all mistakes of judgment by the coal buyers. That is a movement which I am not willing to start.

Third—Every cry of famine gives birth to new wagon mines or snow birds. Those temporary mines kill the car supply of the permanent mines; add unnecessarily to the burden of the railroads by compelling them to switch cars in more places to get the same tonnage of coal; encourage the mining and loading of dirty coal; advance wages to rob the legitimate mines of their labor, and bring on another demand for a wage increase, and perhaps a strike of the miners, such as you now have in Illinois, and advance prices still more because they represent an element which is attracted into coal by the price alone. This is killing the coal industry, and because it is doing so it represents a policy which I do not care to adopt or to further.

Fourth—To preach famine only scares the public. When it buys through fear, prices rise. High prices anger the public. The higher the price now, the harder the coal trade will have to fight for freedom when Congress reassembles on Dec. 6. I can't be a party to any such scheme.

Fifth—To say now that a real famine cannot be avoided next winter is for the coal man to say that private operation of the railroads is a failure. That is exactly what the old Railroad Administration and the railroad brotherhoods want said. Such a policy alienates the friendship of the railroads at a time when coal needs every friend it can get and leads to the demand that coal be regulated to match that of the carriers and the public utilities. When I see the consequences I cannot subscribe to the doctrine.

Sixth—To admit that there is a famine now makes inevitable the placing of an export embargo. If that is ever done, America will confess to the world that we can do nothing to meet the world demand for coal for years to come. This is fatal. Every successful commercial nation has based its plea for foreign trade upon the coal it had to give. Coal was to constitute our most forceful bid for foreign trade. We want that foreign trade. We have spent three and a half billion dollars of the people's money to build ships. We now own one-third of the world's shipping. We have built a shipping board to outline our shipping policy. We are creating American routes over which American ships may travel. Our coal exports alone justify those ships and those routes. If we stop the exportation of coal now we must aim a deadly blow at both our foreign trade and our merchant marine. But we cannot continue to export coal if it is true that there is a real coal famine at home.

Seventh—I have met in concrete form the demand that we, as a people, regulate coal to match the possibilities of the other regulated industries—the railroads and the public utilities. If we say, therefore, that there is a coal famine now—and hence that present prices are justified by the law of supply and demand—we must admit that the railroads cannot get coal without an assigned-car order and that the public utilities cannot buy it all at a price which they can afford to pay. There is only one answer to that admission. That answer is another fuel administrator to fix coal prices.

So, when I see the inevitable consequences of continuing to cry out that a coal famine exists, I want first to be almighty sure that there is a famine. I can see how it is possible—by begging a premise—to prove that a famine exists.

I can also see how it is possible—by begging another premise—to put an equally good foundation under my statement that there is no danger of a famine.

I do not know which premise is correct. No one else does. So, voluntarily I assume that there is no famine. I merely select the safer course and do so to avoid the inevitable consequences which I have outlined.

Having said so much I have explained myself. I am speaking boldly these days because I realize that we are now making those policies which must govern the coal industry for five years at least. I cannot believe we are safe if we decide the questions which are necessarily involved, out of consideration only for the immediate profit to any group. I am not convinced that we are safe if we decide our trade policy without some consideration being given to the points which I have raised. Even so, I know that these points are only the beginning of the complexities of the present coal situation.

Commission Orders Additional Shipments of 500,000 Tons to New England

Service Order No. 11 Directs a Total of 1,250,000 Net Tons of Bituminous Coal to Tidewater Ports for New England—J. W. Howe and E. M. Graham Have Been Named as Agents to Execute Order

FOLLOWING the same general lines as Order No. 10, which provides for increased Lake shipments, the Interstate Commerce Commission on Tuesday, July 27, issued Order No. 11, directing the railroads serving Eastern coal fields to ship specified minimum monthly quantities of bituminous coal to tidewater pools for New England delivery. The order specifies that 250,000 tons shall be dumped at New York, 100,000 tons at Philadelphia, 250,000 tons at Baltimore and 650,000 tons at Hampton Roads. This represents an increase over dumpings in June for New England account of 500,000 net tons. The monthly rate called for is nearly the average for 1918 and is not quite twice the average rate at which New England took tidewater coal in 1919.

The rates of dumping called for by the order will require increases of 15 per cent on Sewalls Point piers over present performance, more than 40 per cent over Lamberts Point piers and 30 per cent at Newport News. It is reported that the New Haven has arranged for its supply of fuel coal all rail via Hell Gate Bridge from Pennsylvania and West Virginia fields, which if true will increase the rail receipts in New England beyond expectations and decrease the demand for water-borne coal.

Coal is now being delivered through the New England all-rail gateways at the rate of 6,000 cars a week, which, figured at 50 tons per car, represents 300,000 tons a week—a rate in excess of any attained during 1918, when the movement was under great pressure. If this rate is maintained for even a short period, demand will certainly decrease for higher-priced water-borne coal, and there is serious question whether New England will

Allotments of Lake Coal Under Service Order No. 10

(The quantities shown are to be shipped in 100 working days beginning July 15)

Originating	Ohio				Pennsylvania			West Virginia			Ky.		
On	No. 8	Cambridge	Hocking	Middle	Freeport	Pittsburgh	Connellsville	Fairmont	Kanawha, Thacker, Kenova	Smokeless		Total Tons	Cars‡ per Day
Baltimore & Ohio	1,750,000	150,000	60,000	20,000	125,000	36,000	650,000	.....	.....	.....	2,791,000	558.2
Pennsylvania	900,000	750,000	.....	.....	60,000	2,500,000	23,000	.....	.....	.....	.....	4,233,000	846.6
Wheeling & Lake Erie	1,000,000	.....	.....	25,000	.....	.....	.....	.....	.....	.....	.....	1,025,000	205.0
Hocking Valley	.....	.....	1,240,000	.....	.....	.....	.....	.....	.....	.....	.....	1,240,000	248.0
Toledo & Ohio Central	.....	.....	1,000,000	.....	.....	.....	.....	.....	.....	.....	.....	1,000,000	200.0
New York Central	150,000	.....	.....	205,000	.....	.....	.....	.....	.....	.....	.....	255,000	71.0
West Side Belt	200,000	.....	.....	.....	.....	700,000	.....	.....	.....	.....	.....	900,000	180.0
Buffalo & Lake Erie	.....	.....	.....	.....	540,000	.....	.....	.....	.....	.....	.....	540,000	108.0
Pittsburgh & Lake Erie	.....	.....	.....	.....	.....	800,000	.....	.....	.....	.....	.....	800,000	160.0
Pittsburgh, Chartiers & Youghiogheny	.....	.....	.....	.....	.....	75,000	.....	.....	.....	.....	.....	75,000	15.0
Montour	.....	.....	.....	.....	.....	800,000	.....	.....	.....	.....	.....	800,000	160.0
Monongahela	.....	.....	.....	.....	.....	.....	175,000	150,000	.....	.....	.....	325,000	65.0
Kanawha & West Virginia	.....	.....	200,000	.....	.....	.....	.....	.....	660,000	.....	.....	860,000	172.0
Chesapeake & Ohio	.....	.....	.....	.....	.....	.....	.....	.....	2,750,000	*200,000	250,000	3,200,000	640.0
Norfolk & Western	.....	.....	.....	.....	.....	.....	.....	.....	300,000	†800,000	.....	1,100,000	220.0
Sandy Valley & Elkhorn	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	80,000	80,000	16.0
Coal & Coke	.....	.....	.....	.....	.....	.....	.....	.....	40,000	.....	.....	40,000	8.0
Louisville & Nashville	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	450,000	450,000	90.0
Long Fork	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	120,000	120,000	24.0
Union	.....	.....	.....	.....	.....	.....	66,000	.....	.....	.....	.....	66,000	13.2
Totals	4,000,000	900,000	2,500,000	250,000	600,000	5,000,000	300,000	800,000	3,750,000	1,000,000	900,000	20,000,000	4,000

* New River. † Pocahontas. ‡ Estimated at fifty tons per car.

be able to absorb 1,250,000 tons a month of tidewater coal. It is reported that New England wholesalers who must handle this coal have already expressed their apprehension over Mr. Storrow's evident intention to flood the market with coal, as in 1918.

The text of Order No. 11 is as follows:

It appearing in the opinion of the commission that because of a shortage of equipment and congestion of traffic, aggravated by unfavorable labor conditions which continue to exist upon the lines of the Pennsylvania Railroad Co., New York Central Railroad Co., Baltimore & Ohio Railroad Co., Philadelphia & Reading Railway Co., Western Maryland Railway Co., Chesapeake & Ohio Railway Co., Norfolk & Western Railway Co., Virginian Railway Co., Interstate Railroad Co., Norton & Northern Railway, Monongahela Railway Co. and Cumberland & Pennsylvania Railroad Co., each and all of which are common carriers by railroad subject to the Interstate Commerce Act, and further because of the inability of said common carriers properly and completely to serve the public, an emergency exists which requires immediate action with respect to the transportation of bituminous coal to tidewater coal transshipment piers at and north of Hampton Roads, Va., for transshipment by water to New England;

It further appearing that the inhabitants of New England are in a large measure dependent upon bituminous coal which to meet their requirements must be transported from mines in Pennsylvania, Maryland, West Virginia and Virginia to New England by rail and water at the rate of approximately 1,250,000 net tons each month;

It further appearing that the rate at which bituminous coal has been and is now being transported to New England by rail and water has been and now is short of the aforesaid requirements to the extent of approximately 350,000 net tons each month:

It is ordered that Order No. 6, entered June 19, 1920, is hereby superseded and rescinded, effective Aug. 2, 1920.

It is further ordered that effective Aug. 2, 1920, and until the further order of the commission the common carriers hereinbefore described be, and they are hereby, authorized and directed to give preference and priority in the supply of cars for and in the transportation of bituminous coal in the following respects:

New York Harbor

(1) To the extent determined to be necessary by J. W. Howe, who is hereby designated as agent of the commission therefor, to cause the transportation and consignment to the Tidewater Coal Exchange, Inc., New York, N. Y., for transshipment by water to New England as part of a pool or pools of tidewater coal as nearly as may be each calendar month the quantity of bituminous coal hereinafter designated, namely, from coal fields served by:

	Net Tons per Mo.
(a) Pennsylvania Railroad Co. east of Pittsburgh, Pa.	122,000
(b) Monongahela Railway Co.	5,000
(c) Baltimore & Ohio Railroad Co. on and east of Connellsville and Monongah divisions, including Cumberland & Pennsylvania Railroad Co.	84,000
(d) New York Central Railroad Co. in the State of Pennsylvania	20,000
(e) Western Maryland Railway Co.	19,000
Total	250,000

Philadelphia Harbor

(2) To the extent determined to be necessary by the said J. W. Howe, who is hereby designated as agent of the commission therefor, to cause the transportation and consignment to the Tidewater Coal Exchange, Inc., Philadelphia, Pa., for transshipment by water to New England as part of a pool or pools of tidewater coal as nearly as may be each calendar month the quantity of bituminous coal hereinafter designated, namely, from coal fields served by:

	Net Tons per Mo.
(a) Pennsylvania Railroad Co. east of Pittsburgh, Pa.	50,000
(b) Baltimore & Ohio Railroad Co. on and east of Connellsville and Monongah divisions, including Cumberland & Pennsylvania Railroad Co.	40,000
(c) Western Maryland Railway Co.	5,000
(d) New York Central Railroad Co.	5,000
Total	100,000

Baltimore Harbor

(3) To the extent determined to be necessary by the said J. W. Howe, who is hereby designated as agent of the commission therefor, to cause the transportation and consignment to the Tidewater Coal Exchange, Inc., Baltimore, Md., for transshipment by water to New England as part of a pool or pools of tidewater coal as nearly as may be each calendar month the quantity of bituminous coal hereinafter designated, namely, from coal fields served by:

	Net Tons per Mo.
(a) Baltimore & Ohio Railroad Co. on and east of Connellsville and Monongah divisions, including Cumberland & Pennsylvania Railroad Co.	160,000
(b) Pennsylvania Railroad Co. east of Pittsburgh, Pa.	50,000
(c) Western Maryland Railway Co.	40,000
Total	250,000

Hampton Roads

(4) To the extent determined to be necessary by E. M. Graham, who is hereby designated as agent of the commission therefor, to cause the transportation and consignment to members of the Lamberts Point Coal Exchange, Norfolk, Va., at Lamberts Point, Norfolk, Va., whose coal is consigned to designated pools in care of said exchange, or to the Newport News Coal Exchange, Inc., Newport News, Va., at Newport News, Va., or to the Sewalls Point Coal Exchange, Inc., Norfolk, Va., at Sewalls Point, Norfolk, Va., for transshipment by water to New England as part of a pool or pools of tidewater coal as nearly as may be each calendar month the quantity of bituminous coal hereinafter designated, namely, from coal fields served by:

	Net Tons per Mo.
(a) Norfolk & Western Railway Co. east of Welch and Jacobs Fork Branch Junction, W. Va.	360,000
(b) Chesapeake & Ohio Railway Co. east of Huntington, W. Va.	85,000
(c) Virginian Railway Co.	185,000
(d) Norton & Northern Railway	20,000
Total	650,000

It is further ordered that the common carriers hereinbefore described in the territory hereinbefore designated, be, and they are hereby, authorized and directed to place an embargo on the supply of cars for and the movement of all other bituminous coal in carloads to any other consignees or destinations, provided that this order shall not apply to cars furnished, placed or assigned under any order or direction heretofore or hereafter entered by the commission, and with respect to territory affected by Service Order No. 10 shall apply to each producer and shipper on each day only after said Service Order No. 10 has been complied with and not before, and

Provided further that after a producer and shipper of bituminous coal served by any of the said common carriers in said territories has on any day shipped to any of the said coal exchanges as hereinbefore provided at any of the said ports a percentage (to be determined and announced for each coal producing district served by the Pennsylvania Railroad Co., New York Central Railroad Co., Baltimore & Ohio Railroad Co., Cumberland & Pennsylvania Railway Co., Philadelphia & Reading Railway Co., Western Maryland Railway Co. and Monongahela Railway Co., by the said J. W. Howe, who is hereby designated as agent of the commission therefor, and the Chesapeake & Ohio Railway Co., Norfolk & Western Railway Co., Virginian Railway Co., Interstate Railroad Co. and Norton & Northern Railway, by the said E. M. Graham, who is hereby designated as agent of the commission therefor, of the total number of cars to which the producer and shipper is entitled on said day then this embargo shall not apply to the said shipper for the remainder of the said day, and he shall be permitted during the remainder of the said day to ship the remainder of the cars to which he is entitled to any consignees and destinations he may desire, including the coal exchanges hereinbefore set forth and the said ports.

It is further ordered that bituminous coal in carloads consigned under this order in the manner hereinbefore set forth shall not be subject to reconsignment except upon a permit and direction therefor issued by the said respective agents of the commission, which permit and direction

shall be issued by them only on a showing that the coal so to be reconsigned will go to a pool or pools at one of the ports hereinbefore referred to for New England.

It is further ordered that shippers having credits in a pool at any of the tidewater ports hereinbefore referred to, which credits have been obtained by the shipment into the said pool of coal consigned under this order, shall not be permitted to draw against the said credit and ship from the said pool to any destination except destinations in New England.

It is further ordered that the percentages hereinbefore referred to shall be subject to change from time to time by the said respective agents of the commission upon one day's notice to the carrier or carriers concerned.

It is further ordered that each of said common carriers by railroad shall establish such rules and regulations respecting the placement of cars for unloading and of vessels for loading at such piers as will effect the preference and priority in transportation hereby directed, including the dumping of cars.

And it is further ordered that copies of this order be served upon the carriers hereinbefore described, and that notice of this order be given to the general public by depositing a copy hereof in the office of the secretary of the commission, at Washington, D. C.

How Order No. 11 Will Be Applied

J. W. HOWE, commissioner of the Tidewater Coal Exchange and agent of the Industrial Coal Commission at the three northern Atlantic ports, has announced the percentages of net mine ratings, after deducting other priorities, that shall govern shipments from mines in order to provide coal for New England under Order No. 11.

The New York Central must furnish 2.7 per cent of net rating; the Baltimore & Ohio, 14 per cent; the Pennsylvania, 3.3 per cent; Western Maryland, 10 per cent; Monongahela, not yet determined. These are percentages of ratings and not of production. If, for instance, output is but half of rating, the percentage of production required to be shipped on this order would be twice that given above.

Lake Priority Order Requires Third of Production in West Virginia Fields

THERE was a general compliance on the part of West Virginia operators with Service Order No. 10 during the first week in which that order was in effect, though in some fields, particularly the high volatile fields of southern West Virginia, it worked a hardship owing to the fact that not only were no additional cars provided but transportation facilities were even more limited than had been the case in previous weeks. As high as 30 per cent of the car ratings of some fields was required to meet the terms of the new order.

Under Order No. 10 the Logan field is required to load 204 cars per day, that being 15 per cent of the daily allotment or car rating. But 15 per cent of the rating on the basis of present car supply means 30 per cent of the total loading, or output, of the field—that is, to fill the order nearly one-third the present production must be shipped to the Lakes.

Although Kanawha mines were allocated only 15 per cent of their rating as their proportion of coal to be shipped to Lakes, it required virtually 25 per cent of the output to meet the requirements of the order, owing to limited car supply.

One hundred and eighty-five cars a day was the proportion of loads required to be shipped from the Fairmont fields to the Lakes. An increased car supply in this field made it fairly easy to meet the new demands.

New River mines were required to furnish 2½ per cent of their rating as their proportion of Lake fuel under the Lake order. Seven per cent of mine rating was the allocation made to Norfolk & Western mines as their proportion of the tonnage to be shipped to the Lakes. Cars were plentiful in Norfolk & Western territory, so that it was easy for these mines to comply with the order.

Mines on the Kanawha & Michigan were required to furnish 30 per cent of their car allotment under the provisions of Service Order 10. Seventeen per cent was the proportion alloted to Kentucky mines reached by the Chesapeake & Ohio.

Tidewater Coal Dumpings Are Increasing

DUMPINGS of bituminous coal at tidewater during the week ended July 24, according to reports of the American Railroad Association, totaled 25,690 cars. This included all coal dumped over tidewater piers at the ports of Charleston, Hampton Roads, Baltimore, Philadelphia and New York, whether destined for New England or other coastwise and local use, for bunker or for export. That this was a very heavy movement is indicated by the fact that it is 2,890 cars greater than the weekly average for June, 1920, the record month. The total movement for the first twenty-four days of July was 77,365 cars. If continued for the seven remaining days of the month this would mean a total tidewater movement for July of 4,800,000 net tons.

Weekly dumpings by ports since the first of June are shown in the following table. Except for the week of Independence Day (July 4-10) there has been a gradual increase in the volume of movement through New York and Hampton Roads. Dumpings at Baltimore, on the contrary, have not yet been restored to the rate maintained in early June.

CARS OF BITUMINOUS COAL DUMPED OVER TIDEWATER PIERS AT FOUR NORTH ATLANTIC PORTS AND CHARLESTON

Week Ended	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	Totals
June 5	5,204	3,013	4,505	7,617	496	20,835
June 12	7,254	3,600	4,330	8,653	571	24,407
June 19	7,575	3,099	4,523	8,267	460	23,924
June 26	7,562	1,731	3,468	9,012	271	22,044
July 3	7,528	2,232	2,410	8,746	283	21,198
July 10	6,009	2,018	2,558	8,871	353	19,809
July 17	8,338	2,768	2,795	7,970	430	22,300
July 24	8,424	3,456	3,683	9,601	526	25,690

Rail Shipments to New England Set Record

THE rail movement of bituminous coal to New England during the week ended July 24 was the largest of the year and one of the largest on record, according to the Geological Survey. Cars forwarded to New England destinations through the five Hudson gateways of Harlem River, Maybrook, Albany, Rotterdam and Mechanicsville numbered 7,033. This was an increase of 2,506 cars over the corresponding week of 1919 and of 3,729 cars over the average for the first half of 1920.

These figures represent the greater part though not all of the rail shipments to New England, and are thoroughly comparable from week to week.

CARS OF BITUMINOUS COAL FORWARDED THROUGH HUDSON GATEWAYS DESTINED FOR NEW ENGLAND POINTS

Week Ended	1920	1919	Week Ended	1920	1919
May 29	4,335	3,467	July 3	4,962	4,105
June 5	3,571	3,444	July 10	6,276	3,834
June 12	2,817	3,164	July 17	6,154	3,682
June 19	3,881	3,962	July 24	7,033	4,527
June 26	4,112	4,134			

Stocks of Coal in the Hands of Consumers March 1 and June 1, 1920

COMMERCIAL stocks of bituminous coal in the United States on June 1, 1920, are estimated at 20,000,000 net tons. This was considerably less than stocks carried on Oct. 1 of the years 1916 and 1917, and was very much less than the stocks accumulated at the close of 1918. From March 1 to June 1, 1920, stocks decreased 4,000,000 tons, or 17 per cent.

These figures are estimates prepared by F. G. Tryon, of the U. S. Geological Survey, which attempt to account for coal in the hands of railroads, industrial consumers, public utilities, and retail dealers. They do not include coal in the cellars of domestic consumers, coal in stock for steamship fuel, or coal in transit. The stocks on the Lake docks are not included because they are properly to be regarded as coal in transit and because naturally they vary greatly from winter to summer.

Information available concerning stocks of coal in the past is summarized in the following table:

TOTAL COMMERCIAL STOCKS OF BITUMINOUS COAL IN THE UNITED STATES, OCT. 1, 1916, TO JUNE 1, 1920
(Net Tons)

Oct. 1, 1916	From 25 to 29 million	probably 27,000,000
Oct. 1, 1917	From 26 to 30 million	probably 28,100,000
July 15, 1918	From 38 to 42 million	probably 39,700,000
Oct. 1, 1918	From 58 to 60 million	probably 59,000,000
Day of the armistice	From 62 to 64 million	probably 63,000,000
Jan. 1, 1919	From 57 to 59 million	probably 57,900,000
April 1, 1919	From 38 to 42 million	probably 40,400,000
March 1, 1920	From 22 to 26 million	probably *a*24,000,000
June 1, 1920	From 18 to 22 million	probably *a*20,000,000

a Subject to revision.

The figures for 1916 and 1917 are less accurate than those for later dates, but indicate that in those years the consumers of the country had on hand in the fall from 25,000,000 to 30,000,000 tons of coal. By the middle of 1918, the next date for which figures are available, the efforts to increase production had built up stocks to a little under 40,000,000 tons. Throughout the summer and fall of 1918 production continued at a rate far in excess of current consumption and stocks increased rapidly, reaching on Oct. 1 59,000,000 tons, more than double the figure on that date for the two years preceding. On the day of the armistice commercial stocks were about 63,000,000 tons.

In its program of increased production the Fuel Administration had in view the prevention of a repetition of the fuel shortage of the first winter of the war, and the provision of a reserve against the expected decrease in output as the draft made further inroads on the number of mine workers. The stocks thus built up proved to be much greater than were needed for the slackening industrial activity which followed the Armistice, especially in view of the mild weather during the winter of 1918-1919. For months consumers drew upon their reserves to meet current requirements, and the store of coal above ground diminished to 57,900,000 tons on Jan. 1, 1919, and to approximately 40,400,000 tons at the opening of the coal year 1919-1920.

Decline in stocks continued during the first half of the year 1919. They probably reached the low point in August of that year, and thereafter began to rise again, the rate of increase being markedly accelerated in the last weeks before the great bituminous coal strike of Nov. 1. It is clear from the way in which the country withstood the effects of the strike that reserves at the outbreak of the strike were considerable. It is equally clear that by the close of the strike reserves above ground were low and that in the territory between the Mississippi and the Hudson, including the Southern Peninsula of Michigan, they had been reduced to the minimum. Progress in rebuilding stocks after the strike was made possible by the large production of January and February, 1920, but as shown by the canvass of stocks on March 1, last, the reserves were still below the pre-war level of October, 1916.

From March to June 1 the diminished production resulting from the switchmen's strike was insufficient to meet the demand, and as a consequence further drafts upon stocks were made, particularly in the northeastern section of the country. Total commercial stocks on June 1, 1920, reached the level of 20,000,000 tons.

The collection of the figures of stocks for March 1 and June 1, 1920, given above, was made possible by funds provided by the Bituminous Coal Commission.

Arrest 15 Tennessee Operators as Profiteers: 50 to 60 To Be Taken Later

FIFTEEN coal operators and brokers were arrested at Knoxville, Tenn., Sunday, Aug. 1, charged with profiteering. They will be prosecuted under the Lever Act. Between fifty and sixty more, it was reported, would be arrested in the next few days for exacting exorbitant profits in the sale of coal.

The margin of profits in the individual cases vary, but in one the Government alleges that the defendants sold coal in carload lots at $7, $7.50, $8 and $8.50 per ton, which cost only $2.90 per ton to produce.

The arrests were the result of a quiet investigation of the books of the coal operators of the Tennessee-Kentucky field made by order of U. S. Attorney W. P. Kennerly.

Coal brokers in Chattanooga are said to have refused to open their books to Federal officers. No arrests have been made there yet. It was stated that the Government probably would take the necessary steps to force these operators and brokers to produce their books.

Those arrested Aug. 1 gave bonds to J. Pike Powers, United States Commissioner, or arranged to do so. Preliminary hearings are expected to start the latter part of next week. Those arrested are:

N. S. Jenkins, president and general manager of the Clinch River Coal Co., wholesalers; L. I. Coleman, president and general manager, Tennessee Jellico Coal Co. and Block Coal & Coke Co., miners and shippers; John L. Boyd, Bear Wallow Coal Co. and Tennessee Southeastern Co.; Guy D. Darst, sales manager, Bewley Darst Coal Co., wholesalers; Jake Bewley, Bristol, president Bewley Darst Coal Co., wholesalers; Homer W. Van Benschoten, Cross Mountain Coal Co., miners and shippers; William H. Van Benschoten, Cross Mountain Coal Co., miners and shippers; James R. Woodridge, Woolridge, Tenn., miner and shipper; Charles M. Moore, president Red Ash Coal Co., miners and shippers; G. Edward Moore, secretary and treasurer Red Ash Coal Co., miners and shippers; George N. Camp, Coal Creek Leasing Co. and Coal Creek Coal Mining Co., miners and shippers; E. C. Clark, Coal Creek leasing Co. and Coal Creek Coal Mining Co., miners and shippers; Carroll W. Henderson, president of Cambria Coal Co. and secretary-treasurer Coalfield Coal Co., miners, shippers and retailers; Frank F. Floyd, vice president Jellico Coal Mining Co., miners and shippers; Arthur Groves, Jellico Coal Mining Co., miners and shippers.

National Coal Association Again Takes Lead

Will Take Whatever Steps May Be Found Necessary to Clean House of Speculators in Coal —Frankness Is Shown

COLONEL WENTZ, president of the National Coal Association, has been keeping in close touch with developments in the critical situation at Washington brought on by the efforts to force coal prices downward. Indications are that Colonel Wentz, who at the invitation of Mr. Palmer visited him at his home in Stroudsburg, Pa, on Sunday, impressed the Attorney General with the prospects of success for the various measures that are being taken by the National Coal Association in its efforts to clear up the present situation in coal. The Attorney General was told in detail of the progress of the coal operators and their constructive program to right conditions. Colonel Wentz offered to call together the Board of Directors of the National so that Mr. Palmer could confer with these representative coal operators, but after his talk with Colonel Wentz he did not consider that necessary.

It is significant that immediately after his conference with the president of the National Coal Association Mr. Palmer indefinitely postponed the meeting of the committee scheduled for Monday, August 2, that was to have advised him in regard to curbing prices. This committee, it will be recalled, came into being as a result of the efforts of the jobbers in New York City to have the Government define profiteering for them.

In a signed statement to the members of the National Coal Association issued on Tuesday Colonel Wentz says:

"Members of our association and coal producers generally doubtless want to know how the officers of the National Coal Association are dealing with the present situation in Washington. In a word, we are using the utmost frankness with all officials of the Government who are interested in this matter. Mr. Morrow and myself have been careful to put all the cards on the table.

"We have been keeping the Interstate Commerce Commission, the Department of Justice, Shipping Board, State Department, Department of Commerce and the White House currently informed of the constructive steps which were being taken by the association to meet the emergencies arising out of the present conditions so far as the authority of the National Coal Association permits activity on our part. While the orders with respect to the Northwest and New England were being worked out in co-operation with the railway executives the Government was kept currently informed of our progress. We have also kept these officials currently informed of developments which have arisen in the application of these orders and the steps which are being taken to meet them.

"One of the conditions most severely criticized at present is the rank speculation in coal in the tidewater territory. The export business is largely blamed for this condition by the public. As a matter of fact it is due to the transportation methods of handling shipments to tidewater. Executives of the Government have been assured that the National Coal Association would take this matter up and endeavor to work out some constructive plans for improvement. With that end in view a meeting was held in Washington on Friday, July 30, of coal producers interested in the export business to discuss this situation. A committee consisting of W. L. Andrews, (chairman) vice-president, Consolidation Coal Co., Baltimore, Md.; T. F. Farrell, second vice-president, Pocahontas Fuel Co., Inc., New York City; Lindsay McCandlish, second vice-president, Hutchinson Coal Co., Philadelphia, Pa.; C. B. Ebbert, manager sales, White Oak Coal Co., Washington, D. C.; E. J. McVann, secretary, Smokeless Coal Operators' Association, Washington, D. C., and J. W. Searles, general sales manager, Pennsylvania Coal and Coke Corporation, New York City, was appointed to go into the matter in detail and prepare suggestions for discussion with the railways interested. We hope that definite and effective measures may be taken which will cut out the unjustifiable speculation in coal and the misuse of transportation facilities for that purpose along the Atlantic seaboard.

"Information in the hands of the committee leads us to believe that some 5,000 cars are now being diverted to speculation in coal. We have assured the Government of our intention to cut those cars out of use by speculators and put them to work hauling coal from the mines to the consumers. If it is possible to accomplish this result, the committee will do it. This piece of housecleaning is expected of us by the public and the Government. We hope we will have the support of every member of the association in putting it through."

Freight Differentials on Coal To Be Preserved

THE essence of the rate-advance decision of the Interstate Commerce Commission as it relates to coal will be found in the following extract from the official text:

"Carriers serving the Pennsylvania-Ohio-West Virginia coal fields propose to continue the existing differentials in coal rates and have worked out a scheme of rates to effect that result. Carriers in the Southern and Western groups propose to ignore existing differentials in coal rates within those groups. *The proposal of the Eastern lines to preserve existing relationships is approved, and carriers in the other groups should work out a similar plan for restoring the relative adjustments of coal rates now obtaining in those groups.* An effort should be made promptly to devise rates in each group that will yield, as nearly as practicable, the same revenue in the aggregate as would be afforded by a straight percentage increase on the bases herein approved."

It is understood that the Eastern lines have already worked out new tariffs that, using the Westmoreland rate east as a base, will give the required total percentage increase in revenue and also will preserve existing differentials. No delay is expected in having these approved and put into effect.

Gives Instance of Buying Panic That Prolongs Coal Crisis

THE Department of Justice has no delusion as to the influence of exports upon the domestic coal situation. Judge Charles B. Ames, first assistant to the Attorney General, told newspapermen July 29 that it is not exports but a buying panic that is causing the trouble. He vouched for an actual incident by way of example. He said that one of the largest manufacturers in the country purchased a lot of coal at $7 a ton. Before the coal was delivered it was re-purchased by one of his own agents at $9 a ton.

Palmer Seeks Definition of Coal Profiteering

Committee Is Appointed to Determine the Limit of Reasonable Prices—Export Business Will Be Affected—Conference Postponed.

PRESSURE of public opinion against the prevailing high prices for spot coal has stirred up the Wholesale Coal Trade Association of New York and a serious attempt is being made to interest the Government and other branches of the industry in a concerted campaign to lower prices. The association called upon Attorney General Palmer to meet its members in New York on Wednesday, July 21, to discuss ways and means. Judge Ames attended this meeting for Mr. Palmer, and as a result of the conference the Attorney General issued invitations to a number of men interested in the subject of coal, particularly those who he understood were exceptionally well versed in the intricacies of the present situation, to meet him in New York on July 27.

Conference Called to Obtain Information

It is understood that Mr. Palmer made it clear in his invitation that he asked for the conference solely to obtain information and advice to guide him in the performance of his duties. The general feeling is that the administration has no desire to reintroduce Government regulation of prices; all are tired of that sort of thing; but the insistent demand that something be done to reduce the unjustifiably high prices now quoted on free coal and that "profiteers" be jailed has made it necessary for the Attorney General to do something. He does not know where to draw the line—whether a price of $4 represents profiteering or whether $6 is the line above which he should order prosecutions. It is well known that the coal men have in several instances asked the Department of Justice what prices they will be allowed to charge for coal without being in danger of prosecution, and that they have in no instance been given an answer.

The desire to clear the air and assist the Governernment fix such a level or levels below which the trader in coal would know that he could proceed with his business in safety probably is what has been in the minds of those in the wholesale trade who have brought the Attorney General into the proceedings.

Committee to Stipulate Top Price

The meeting in New York on July 27 resulted in the appointment of a committee who have been asked to report to Mr. Palmer with recommendations on how to handle the situation. There is no intimation as to how the committee will handle the situation except that there is a feeling that the best thing to do is to determine a figure representing clearly the top level at which any producer can be justified in selling coal under present-day conditions. A margin for wholesalers also probably will be suggested and possibly some intimation as to how to handle the reconsignment problem, the alleged abuse of which has been the cause of so much adverse criticism of the jobbers.

The committee which was appointed by Mr. Palmer consists of Vance C. McCormick, former chairman of the Democratic National Committee, and William C. Potter, who was Fuel Administrator of Pennsylvania during the war, as representatives of the public; J. W. Lieb, vice-president of the New York Edison Co., representing the consumers; G. N. Snider, of the New York Central Lines, representing the railroads; while the representatives of the wholesale dealers are Willis G. Towne, of Archibald McNeil & Co.; Charles A. Owen, Imperial Coal Co.; Harlow Voorhees, of Philadelphia, and Charles L. Couch, of Buffalo, who is president of the American Wholesale Coal Association. The National Coal Association has been invited to name the representatives of the producers to be added to the committee. Charles S. Allen, secretary of the Wholesale Coal Trade Association of New York, will be the executive secretary of the committee.

Officials and Operators Attend

Others who attended the conference included United States Attorney Francis G. Caffey, southern district of New York; G. H. Capeton, Charleston, W. Va.; John H. Jones, Bertha Coal Co., Pittsburgh; C. Andrade, Jr., president, and Gibbs L. Baker, of Washington, general counsel of the Wholesale Coal Trade Association of New York.

At the conclusion of the conference the committee issued the following statement:

"Attorney General Palmer has asked this committee to consider the feasibility of naming a fair margin of profit for producers and dealers in bituminous coal. It is not the intention of the department to fix prices, but merely to ascertain a maximum margin of reasonable profit beyond which prosecutions under the Lever Act will be commenced.

It is expected that the members of the committee will advise the Attorney General on this matter within a few days, and it is the purpose of Attorney General Palmer upon receipt of that advice to instruct the United States attorneys and his special representatives that a producer or dealer selling coal at or under that figure will be presumed to be within the spirit and the letter of the Lever Law and that as to those who exceed the margins, whether producers or dealers, such action will call for an investigation on the part of the department.

"It is felt by Attorney General Palmer and concurred in by the committee, representing, as it does, producers, wholesalers and consumers, that this action on the part of the Department of Justice will have a deterrent effect upon those who are now taking excessive profits, and it is hoped that it may result in a decline in the price of bituminous coal.

Determined to End Profiteering

"The Lever Law against profiteering applies to export as well as domestic coal and the Attorney General is determined that profiteering shall cease. In this purpose he has the unqualified support of the advisory committee."

The Department of Justice, through the acting Attorney General, has announced that the conference between representatives of the Department of Justice, the Navy, Shipping Board, Interstate Commerce Commission, Department of Commerce and this committee scheduled for Aug. 2 in New York City, has been postponed indefinitely, although the officials at the Department of Justice express the opinion that it will be held some time in the near future. It is understood that the reason for postponement was because some of the representatives on the committee from the coal industry could not be present on the date specified.

State Mine Project Beaten, Indiana Operators Contract to Supply State Institutions

A CONTRACT whereby members of the Indiana Coal Operators' Association will provide all coal needed by state institutions beginning Aug. 1 and ending May 1, 1921, at $2.95 a ton for screenings, $3.20 a ton for mine run and $3.35 to $3.50 a ton for coal of prepared sizes, is to be entered into between the association and the State Joint Purchasing Committee, according to Maurice C. Shelton, secretary of the committee. The action of the two bodies follows the complete defeat of the administration bill presented during the special session of the State Legislature which would have provided for the purchase of a mine and cars by the state in order that coal might be provided. Incidentally, it is the first time on record when the coal operators as an organization have guaranteed state institutions coal.

Operators Attack Speculators

National Coal Association Seeks Abolition of Reconsignments to Cure High Prices—Committee Plans to Eliminate Opportunists

SPECULATION in coal along the Atlantic seaboard, made possible by liberal reconsignment privileges extended to shippers by the railways, by demurrage and other provisions of the tidewater coal pools which are managed and operated by the railways under sanction of the Interstate Commerce Commission and by the methods of handling tidewater shipments in vogue on different railways, in the opinion of the National Coal Association, has had much to do with the upset market conditions that have recently prevailed.

A committee of operators who have been in the business of exporting coal for many years has been appointed by Colonel Wentz, president of the association, to devise measures to largely limit the practice of reconsignment of coal in transit, as it is believed that this practice results in excessive delays to cars of coal, promotes congestion in yards and fosters speculation. The committee is reported to have stated that under present methods of handling tidewater shipments of coal more than 5,000 cars a day are needlessly in use and that these are the cars with which the speculators are playing the coal market. This misuse of transportation by speculators or jobbers, who are described as conscienceless and without real interest or responsibility in the production of coal or the welfare of the industry, is affecting the production, transportation and distribution of coal in all the territory east of the Allegheny Mountains.

All responsible operators in the bituminous coal industry have been endeavoring to keep the public supplied with coal, and at low prices. Where exorbitant prices for coal are being exacted the public ought to understand that it is not the responsible mine owner or operator who is to blame, but the speculator, who always springs up in such an emergency as has existed under the prevailing coal shortage. The operators have tried to break up the system of reconsignment of cars, with the consequent speculative opportunity, but up to this time without avail. In the meantime speculators have run prices to consumers up to $10 and $12, or even more, a ton, as against prevailing average prices of $3.25 to $4 a ton at the mines. The operator cannot control the coal after it leaves the mine.

The blame is placed squarely upon unscrupulous handlers, or speculators, in no way related to the operators, who have been exacting exorbitant prices in the open market for coal which they have obtained at low prices prevailing at the mines.

The National Coal Association, whose membership embraces operators with over two-thirds of the entire soft-coal output of the country, is determined to drive these speculators out.

Indiana Legislature Agrees on Commission Bill to Regulate Coal Prices

MEMBERS of the House of Indiana's General Assembly have concurred in a conference report on the Winesburg-Bonham Coal Commission Bill. Its passage now is almost certain. The questions raised and decided by the Senate were adjusted in the House without debate. As changed by the conferences, the measure designates the State Board of Accounts as the body to carry out the provisions for regulating the price of coal and investigating the prices of the necessities of life, with a view to recommending legislation to the next session on the latter subject.

Briefly the bill provides for the employment of necessary engineers, clerical help and attorneys in carrying on the work of investigating and regulating the price of coal by the accounts board. Broad powers are conferred on the commission to compel persons engaged in mining coal or in the wholesale or retail coal business to produce for inspection all books, records, etc., and to give evidence of any fact bearing on the price of coal. Refusal to obey an order of the commission is punishable on conviction by imprisonment at the State Penal Farm for not more than one year and a fine of not exceeding $5,000.

Mining operators are required to take out a license, the fee for which is $25; wholesale dealers must also take out licenses, the fee for which is $10, and retailers must take out licenses at a fee of $5. These licenses are subject to revocation by the commission, and a fine not exceeding $5,000, to which may be added imprisonment up to one year at the penal farm, is provided for those engaged in the coal business without licenses.

The commission has the "right and it shall be its duty, after affording to all persons interested a full opportunity to be heard, to adduce evidence and to be represented by counsel, to regulate and fix the price at which all coal moving in intrastate commerce in the State of Indiana shall be sold to jobbers, wholesale and retail coal dealers and to the public, provided that no price fixed shall be confiscatory, nor shall it be less than the actual cost of the coal plus a fair and reasonable return on the property used in the production and sale thereof."

Power is conferred on the commission to ascertain the average amount of coal required monthly in Indiana for all purposes and to require sufficient output of the mines for this purpose. A fee of one cent for each ton of coal mined is to be paid into the State Treasury, the money to be used to defray the expenses of the commission. An emergency clause makes the bill effective immediately on its passage. The commission's powers under the bill shall expire March 31, 1921.

The commission also is empowered to investigate the high cost of living and profiteering with view to making recommendations for legislation at the next session of the legislature.

The Labor Situation

Edited by
R. Dawson Hall

Broad Top Miners Reject Arbitration

SETTLEMENT of the mine workers' strike in the Broad Top field of Pennsylvania by arbitration July 23 failed when representatives of the men are said to have rejected a number of propositions submitted by the operators.

A joint meeting of the operators and officers of District No. 2, United Mine Workers, and William Muir, member of the international board, was in session all day. The men have been on strike about three weeks and work virtually is at a standstill.

Colorado Coal Miners Strike in Protest Against the Use of Electric Lamps

FOLLOWING an order by the Colorado Fuel & Iron Co. installing electric safety lamps, six hundred coal miners employed by the company at Rockvale, Coal Creek and Fremont went on strike July 12. At the office of James Dalrymple, state coal mining inspector, it was said Dalrymple requested the company to install the electric lamps "for the protection of life."

The miners have been using open lamps and assert that the electric lamps do not give light sufficient for efficient work. Open lamps previously have been considered safe, according to officials in the office of the state inspector. Recently, however, gas was found in the Rockvale mine. This resulted in the order to use electric lamps.

Pittston Miners Decline to Refer Contract To President's Commission

LEADERS of the striking miners of the Pennsylvania Coal Co. at Pittston, Pa., announced July 27 that the men have refused the proposition of the company to refer the contract system question to the President's commission, and have declared the strike will continue. They added the announcement that the number of strikers had increased over night from 7,000 to 10,000 and said that before the week was over every colliery of the company would be idle.

The company officials dispute these figures, but are preparing for a long period of idleness. About 15,000 tons of coal and $35,000 in wages are lost daily, besides the profits of the company.

James J. Kennedy, Mayor of Pittston, has held meetings with the clergy of Pittston and surrounding towns, representatives of the miners and business men of the city in an effort to arbitrate the matters at issue, but without avail. The Mayor, referring to the killing of Detective Sam Lucchino, said there was no telling where the trouble would end if the men failed to get together.

Enoch Williams, who was active in the miners' union for a number of years and who was a candidate for president of District No. 1 at the last election of the union told the Mayor that the company violated its contract in hiring contract miners and argued that if the company could violate its agreement, the men who were suffering from the violation had a perfect right to refuse to work until such time as the company learned to respect its agreement with the men.

Ohio Miners Refuse to Report for Work On Saturday

IN THE Sunday Creek valley field of Ohio, as far south as Chauncey and extending clear into the edge of Perry and Hocking counties, several thousand coal miners failed to report for work Saturday, July 24. So few were on hand that little coal was mined.

The demand of the men for a holiday on Saturday seems to have been at the bottom of the trouble, as it was stated that at many mines where the men failed to report the mines were marked up for work and cars were on hand to be loaded.

The men were warned by their officials not to lay off on Saturday because this was in violation of the areement The demand for coal was never so great as now, operators report.

In the upper Sunday Creek valley only two mines were reported to be working full time July 24. One of the three mines on Sugar Creek did not work, and a report from Chauncey states that little coal was being loaded in the Bailey Run district on that date. Cars were on hand but so few men reported at each mine that only a part of a day was gotten in.

Indiana Bottom Coal Controversy Ended

AT A CONFERENCE recently held by the operators and officials of the United Mine Workers in the western part of Indiana, an agreement was made which interpreted the recent contract in regard to the cutting of bottom coal by machine men, this detail having caused much trouble in some portions of the coal fields. The new agreement runs as follows:

"Recognizing the extreme difficulty of cutting coal in exact and literal conformance with the contract, we, the joint executive board of the Indiana Bituminous Coal Operators' Association and district 11, United Mine Workers of America, interpret section 1, article 6, of the Terre Haute agreement, effective April 1, 1920, as follows:

"(1) Machine men shall cut the coal as nearly in accordance with the contract as is practicable, but under no circumstances shall machines cut into the bottom. (2) Where bottom coal left after machines is loose and can be shoveled up, it shall be shoveled and loaded by the loader. (3) Where bottom coal is hard and is allowed to remain, the loader shall cut through the bottom to set his props. (4) Machine men shall be relieved of any obligation to take up or pay for bottom coal, except where it is left in excess of 4 in."

The above interpretation is to apply to No. 4 vein coal only.

Alabama Mines Work More Steadily

Many Mines Working with Depleted Forces—Some Evictions Attempted—Two Killed and Three Wounded at Carbon Hill

SOME progress has been made toward the ending of the long strike of Alabama mine workers, which had its origin in their demand that the management discuss labor difficulties with their representatives—that is, with the union. Recently Montevallo Straven, Galloway No. 10, North Pratt, Smitt Pratt, West Helena, Brookside Pratt, Sloss and Jagger resumed operations. Piper, in the Cahaba coal fields, started work on July 27, and Coleanor is getting ready to reopen soon; both have been idle since May.

Yolande, of the Yolande Coal & Coke Co., has twenty-seven men at work and its output is increasing. Davis Creek is now producing a creditable output. At Corona and Coal Valley, in Corona County, 664 men were at work on Monday, July 26, and the output was 1,313 tons. Another mine now working is the Borden mine. It was idle only a week. Montevallo Straven resumed work on July 18 with only ten men. The number has steadily increased. There are now thirty and the output runs between 50 and 100 tons daily. At No. 16 mine, Blossburg, the Pratt Consolidated Coal Co. has 110 men at work.

At Marvel B. F. Roden, of the Roden Coal Co., has at length wearied of waiting and he now purposes evicting the men who occupy his houses and will not work. They say they will leave if the union lawyer, Frank S. White, tells them to do so. They must be loath to leave, for Marvel is a model mine in every particular and takes place alongside those of the Tennessee Coal, Iron & Railroad Co.

Mr. Roden says he cannot afford to maintain the water works in the town or the electric lighting for idle men, but it is said there is a degree of coercion, for it is noted that the buckets in the wells have been removed. The men say the "Blue Book," meaning thereby the union contract, must be signed. They contend that it is not their fault if the failure of Mr. Roden to sign the "Blue Book" makes people go without coal, nor should they be evicted, seeing it is Mr. Roden's unwillingness to sign up that is the cause of the whole trouble.

Mr. Roden's men came out May 8. On July 20 forty were back at work and the output was 100 tons a day. The men had lost $750,000 by their adhesion to the exact verbiage of the "Blue Book." Mr. Roden certainly has reason to feel sorely tried by the direction matters have taken. With himself and his wife active in taking care of his mine workers he has had four strikes in the last few years. The men like him, but the union is their union and they are bound it shall rule.

In all the course of the Alabama trouble there was nothing of a violent nature till the affair at Carbon Hill, Walker County, when Ben Barrett, deputy of the western division of that county, and Oliver McDade, a non-union miner, were shot and killed by Will Hicks, a striking miner, who himself is at the point of death as a result of the shots returned. A young boy, Bryan McDonald, was seriously wounded by a stray bullet and a sister of McDade also suffered in the same way.

Miners of Washington State Get New Scale

WHEN the Bituminous Coal Commission was in session the operators in Washington State steadily opposed any award of a new scale and none was granted. The mine workers, however, did not cease to agitate for a revision, and on Saturday, July 31, a special commission awarded an increase of 20 per cent to contract labor and a raise of $1 per day to all day labor.

Representatives of the Washington Coal Operators' Association announced as soon as the award was made that they accepted its provisions. A convention of No. 10 district of the union was called to meet Aug. 3 to discuss ratification.

President Tells Illinois Miners to Return to Work and They Obey

DECLARING that "the violation of the terms of your solemn obligation impairs your good name, destroys the confidence which is the basis of all mutual agreements and threatens the very foundation of fair industrial relations," President Wilson on the evening of July 30 urged the mine workers of Illinois to go back to work, adding that "No organization could long endure that sets up its own strength as being superior to its plighted faith or its duty to society at large."

He pointed out that if contracts may be broken by workmen they may be broken by employers and that if the integrity of contracts is weakened by the employees the operators also may disregard their contracts at any time on the plea that they are unable to sell coal at the existing cost of production.

On Sunday, meetings were held all over the Middle West at which it was decided to return to work in accord with the desire of the President of the United States and the mandatory order of John L. Lewis, international president of the United Mine Workers, which order promptly followed the President's letter.

The men are returning to work as unanimously as they formerly quit. When the strike was at its height, Indiana and Illinois were hardly turning a wheel. With the walkout of one hundred mine workers at the Diamond coal mine at Evansville, Ind., only two mines in southern Indiana were working. On Aug. 1, however, the Bicknell and American No. 1 local, which was the first in Indiana to walk out, voted to return to work. In Illinois a similar compliance with the orders of the union and the request of the president is in evidence.

Developments in the Mine Workers' Campaign to Unionize West Virginia

State Police Sent to Mingo County to Halt Shooting—Three Plants on Coal River Settle Strikes—Sabotage in New River Field—Penn-Mary Strike Only 11 Per Cent Effective

MOST of the state police of West Virginia were concentrated in Mingo County again during the week ended July 24 in order to frustrate, if possible, the series of attempts made to close down several plants trying to operate.

Miners at different plants throughout the county have signified a desire to go to work but have been deterred from doing so through fear of being shot at by striking miners trying to prevent resumption of operations by firing upon plants. With the arrival of the state police in Mingo, while there was no general resumption of operations, men were at work in larger numbers at several plants, the Borderland No. 1 plant at Borderland, W. Va., among others.

All Trouble on Coal River Cleared Up

There has been a settlement of strikes at the plants of three companies operating on Coal River, an agreement under which the men returned to work having been announced on July 22. Miners employed at the plants of the Madison Coal Co., the Superior Eagle Coal Co. and the Five Block Coal Co. were directed to cease work on July 1 by W. M. Blizzard of sub-district No. 2 of district 17, because, it was stated, the managements of the companies had not entered into a contract with the miners covering wages, working conditions, etc. With the signing of contracts by the three companies the miners returned to work. All trouble on Coal River having been cleared up, as all operations in that field have entered into an agreement with the miners.

Trouble still exists at several plants on Elk River, the Rex Colliery Mine and the Barren Creek Co. mine still being closed down because of a strike. These companies refused to become a party to any closed-shop agreement.

Willis Branch Co.'s Power Poles Blown Up

As a part of the campaign being waged by members of the United Mine Workers to stop operations at the plants of the Willis Branch Coal Co. and other companies in the New River field operated on an open-shop basis, poles supporting the high transmission wires of the Virginian Power Co. from which the Willis Branch Company secures its power were dynamited at an early hour Saturday morning, July 24, at Willis Branch, putting the mines out of commission until the damage could be repaired. This is only one of a series of efforts to stop production at open-shop plants in the New River field.

At the Willis Branch plant and other open-shop in the field most of those now at work were formerly members of the United Mine Workers, but last year they broke away from the organization and are now said by their employers to be better satisfied than they were as members of the union. Frequent trouble at Willis Branch is due to the fact that only a railroad track separates the open-shop mines from a company operating closed-shop mines. As a result of their proximity to the union miners, life is made miserable by the organized miners. However, the former members of the union will not permit organizers to talk to them, declaring they are better off now than when they were members of the union.

Union Makes Little Headway at Penn-Mary

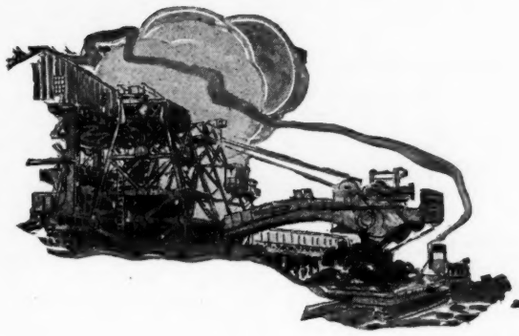
The strike called against the Penn-Mary Coal Co. and other companies operating on the Morgantown & Kingwood R.R. in Preston and Monongalia counties is only about 11 per cent effective insofar as can be gathered, although the claims of both sides conflict. Railroad officials, however, state that while the supply is late mines are working at about 50 per cent of capacity, most of the loss being due to car shortage. Mines of the Penn-Mary company have not in fact been greatly crippled by the strike, but people of Masontown, Reedsville and Kingwood are apprehensive lest the strike lead the company to close the mines.

General opinion is that the United Mine Workers will be able to make little headway in achieving recognition of the union and an acceptance of the closed-shop principle. The Penn-Mary mines were operated on a closed-shop basis prior to the time they were sold to the Penn-Mary company by the Elkins interests, but since October the mines have been operated on an open-shop basis.

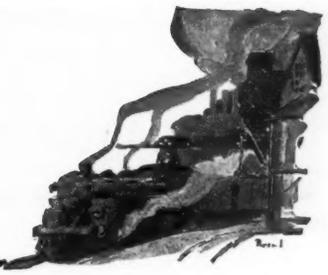
In the face of an assertion by W. M. Rowan, organizer of the United Mine Workers in charge of the strike, that fully 95 per cent or more of the men were on strike and were not in any mood for accepting the Penn-Mary Coal Co. open-shop policy, Samuel Steinbach, general superintendent of the company, on July 22 made a statement in which he said "The strike was called on July 12. No response was made by any Penn-Mary men until July 14. The rating of the Penn-Mary mines is 43.8 cars a day. In the six days from July 14 to 20 we were entitled to 262 railroad cars according to this rating. We actually received, however, during that period only 167 cars, or 63.8 per cent of the rating. Record of the Morgantown & Kingwood R.R. will show that we loaded during that period 138 cars, or 52.7 per cent of our rating.

"A little substraction will show that we have had a loss of 11.1 per cent because of the strike. Most of the men out are being kept away from work by intimidation and threats. Twenty-two Italians armed with clubs put on a demonstration at the Sabraton mine Tuesday and attempted to keep our workman away, but we told the American miners we would give them protection, and we did."

Officials of the Connellsville Basin Coke Co. categorically denied Mr. Rowan's statement that their mine was entirely closed down. "We have fired some men," an official said, "but all our men we didn't fire are at work." Asked if the men discharged were union men, the official said "You might call them that. Most of them are men who live right around here. I don't know whether they are union or not." It was stated that the mine was operating and loading all cars furnished.



Production and the Market



Weekly Review

Production the Last Week in July Lowest Since Early May — Illinois and Indiana Strike the Cause—Men Ordered Back to Work—Lake and Tidewater Shipments Increase—Strenuous Efforts Being Made to Curb High Prices.

SEVERE shortage of coal in the Middle West has resulted from the strike in Illinois and Indiana, consumers grasping for every car available as the strike spread and extended into the second week. The effect on the production of the country is indicated by the figures of the Geological Survey, which show 10,601,000 tons in the week of July 24, a drop of 3 per cent compared with the previous week. Loadings July 26-28 indicate a total of 9,000,000 tons the last week of the month. This will put production below the corresponding weeks of the last three years and will represent a decline to the rate during the first few weeks of the switchmen's strike of this spring. Anthracite output declined by 1.3 per cent in the week of July 24, while beehive coke increased slightly.

The feature of the past week has been the effort of the Attorney General and certain of the coal distributors to find a means of lowering the present high prices on spot coal. Conferences with Mr. Palmer scheduled for this week have been cancelled and simultaneously the operators have opened an attack on speculators, who are blamed for the bad name the coal man is getting as a profiteer. The Department of Justice continues to seek indictments for selling coal for high prices and has served warrants on a number of distributors in the South.

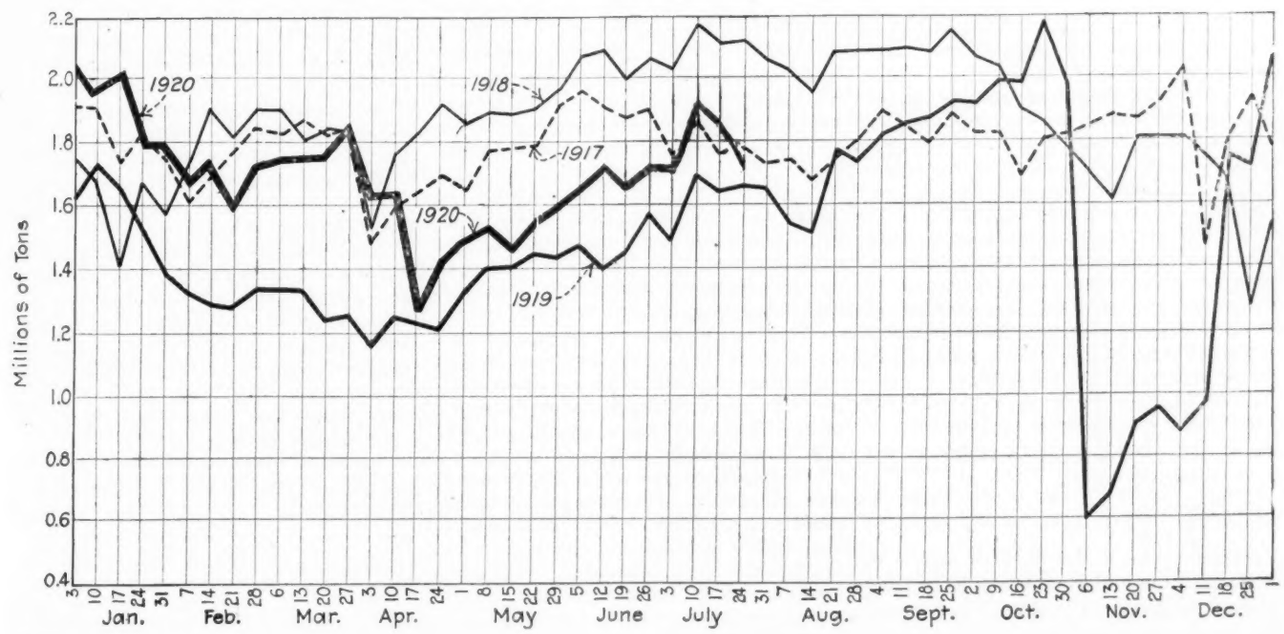
Correction of flaws in the distribution of soft coal, for which the coal operators and railroads have been co-operating, is proceeding satisfactorily. Lake shipments are slowly gaining—in the week just closed dumpings were nearly 800,000 tons, a gain of more than 27 per cent compared with the preceding week. Shipments to New England both by water and rail have shown steady increases the last few weeks.

Lake Coal Dumped Season to July 31

(NET TONS)

	Cargo	Fuel	Total
1919.....	12,617,285	570,738	13,188,023
1920.....	6,327,448	465,686	6,793,134

Average Daily Production of Bituminous Coal



*From weekly report of Geological Survey.

Reports From the Market Centers

New England

BOSTON

Spot Prices Affected by Traffic Restrictions, but Demand Continues Strong—New England Priority Is Not Fully Understood—Fair Dispatch at Hampton Roads — Anthracite Prospect Is More Hopeful — Retail Demand Is Strong.

Bituminous—Prices for spot coal sagged slightly for a few days, due largely to continued embargoes. Boston & Maine territory is still cut off from shipments all-rail, and there is no near prospect of this route being re-opened. As a result, an extra volume of steam coal is being thrown via West Albany. Prices on that line have softened, in some cases nearly $2 per ton. On the other hand, sales of coal en route to Boston & Maine destinations have been made at prices well up to quotations of a fortnight ago. There has also been a strong demand for prompt shipments by water, and in the judgment of the trade the recession in prices f.o.b. mines is only temporary.

The so-called New England priority is by no means fully understood. There is a feeling here that the quota assigned Hampton Roads will probably be forthcoming, but not so much is expected of the proposed movement via Baltimore, Philadelphia, and New York.

Traffic troubles on most of the carriers to tidewater, it is believed, will seriously interfere with the program. Further provisions for assigned cars will also have their bearing, and it is easy to see the new priority will meet with many obstacles.

While switching and loading conditions at the New York and Philadelphia piers have improved materially the past week it is clear that much of this movement, so far as New England is concerned, will be confined to railroad fuel. The fact that so much of the additional coal, which the new priority seeks to provide, will come from high-volatile districts only confirms the opinion of the trade that relatively little commercial coal will be shipped in addition to what is now coming forward.

Current quotations at wholesale for bituminous range about as follows:

	Clearfields	Cambrias and Somersets
F.o.b. mines, net tons	$11.00@$12.25	$12.00@$13.50
F.o.b. Philadelphia, gross tons	14.00@ 15.50	15.00@ 16.75
F.o.b. New York, gross tons	14.50@ 15.90	15.60@ 17.00

Pocahontas and New River have been quoted as from $16@$18.75 per gross ton f.o.b. cars Boston.

Anthracite—Indications are more encouraging for domestic sizes. The recent decision of the railroad wage board has removed most of the ground for the strike of freight trainmen and the latter are gradually returning to their places. The Philadelphia & Reading Ry., for instance, is making a much better showing.

It is likely that the large fleet of barges that has accumulated at Philadelphia will gradually be loaded, and, to that extent, will relieve anxieties of retail dealers along the coast, particularly to the eastward. There are still ports in Maine that have had no shipments this year.

The demand for coal at retail is quite strong. Dealers are on a hand-to-mouth basis, although on certain roads the all-rail service has been up to the average of the past three years. As yet there have been no material advances to the consumer.

Apparently the local distributors are waiting for the expected railroad-freight advance to justify a materially increased price. At the same time, independent coal has been quoted recently as high as $12.75 for stove size, f.o.b. mines.

Tidewater

NEW YORK

Domestic Anthracite Moves Slowly, with Strong Demand — Companies Make Usual Monthly Advance—Steam Coals Show Strength — Bituminous Quotations Fluctuate — Industry Watches Outcome of Conferences Here

Anthracite—There has been little if any gain in receipts here. Demand continues strong and dealers are in the market for all the coal they can obtain.

The strike that affected several mines whose coal is sent to one of the upper ports has reduced the movement of tonnage handled there, but this has been partly offset by increased shipments from Port Reading.

While no official announcement was made it is generally understood that the companies will add the usual 10c. per ton to the July prices for the domestic sizes. These prices are, of course, subject to change.

Car supply shows some improvement and shipments have been on a larger scale. Local dealers have been receiving greater shipments of the sizes most in demand but deliveries have been made in many instances direct to the consumer's bin. Stove coal is badly needed by most dealers.

Independent coal is finding a ready market. Many buyers in an effort to obtain larger tonnages and quicker shipments are in the coal fields and it is said are willing to pay from $12 to $13 for the domestic sizes.

The steam coals continue to be in good demand with the independents quoting, at the mines, from $4.85@$5.50 for buckwheat; rice, $3.25@$4 and barley, $2.25@$2.50.

Current quotations for company coals, per gross ton, at the mine and f.o.b., New York Tidewater, lower ports are as follows:

	Mine	Tidewater
Broken	$7.40@$7.55	$9.25@$9.40
Egg	7.40@ 7.55	9.25@ 9.40
Stove	7.65@ 7.90	9.50@ 9.75
Chestnut	7.70@ 7.90	9.55@ 9.75
Pea	5.95@ 6.35	7.70@ 8.10
Buckwheat	4.00@ 4.10	5.75@ 5.85
Rice	3.00@ 3.50	4.75@ 5.25
Barley	2.25@ 2.50	4.00@ 4.25
Boiler	2.50	4.25

Quotations for the domestic coals at the upper ports are generally 5c. higher on account of the difference in freight rates.

Bituminous — The market became quiet toward the end of the week and some attributed its condition to uncertainty of future prices as the result of conferences held in this city between Federal authorities, operators and consumers, at which the price situation was thoroughly discussed.

There is comparatively little coal at the local docks. Shipments from Arlington and Port Reading have been slow, while better reports were heard regarding deliveries from South Amboy.

Buyers from Canada are prominent in the coal fields but keep their offers around $10. Coal at the piers was quoted at around $15.50 last week with loaded boats quoted at $16@$17.50.

PHILADELPHIA

Retailers Are Short of Coal—Company Circulars Increased 10c. — Buckwheat and Rice Are in Strong Demand—Bituminous Trade Is Upset by Priority Orders — Prices Shade Off, but Are Still High — Rail Service Slowly Improves.

Anthracite — The amount of coal arriving in the city is far from satisfying the dealers. The average retailer is still extremely short of coal. Price, next to the supply of coal, continues to be an important topic.

Beginning with the first of the month the big companies added another 10c. to the mines' price of coal, and by this time all of the independent operators have followed suit. The companies' prices, therefore, for the month of August f.o.b. mines, per gross ton, for line trade, and f.o.b. Port Richmond for tide, are as follows:

	Line	Tide
Broken	$7.35	$9.20
Egg	7.55	9.40
Stove	7.90	9.75
Nut	7.90	9.75
Pea	6.20	8.00
Buckwheat	4.10	5.15
Rice	3.00	3.90
Boiler	2.50	3.50
Barley	2.25	3.15

The retail prices are beginning to respond in accordance with the con-

tinued monthly increases and a general average of prices are as follows: Egg, $13.40; stove and nut, $13.65; pea, $10.85@$11.10. If wheeling or carrying is necessary 50c. a ton is added to the above prices.

The big companies have not increased the buckwheat price, the figure still standing at $4.10. They continue to make current sales, however, with the reservation that while the price is $4.10 the coal will take a price in effect at time of shipment. The demand has become so strong for this size that the smaller companies have no difficulty in obtaining from $4.75 to $5 at the mines for it.

Rice coal is also becoming scarce and it is about all the companies can do to meet their orders. While barley is inclined to be quiet, it is moving more actively and, before the season is far advanced, it is believed the entire production will be taken up.

Bituminous—Much is moving and stirring in the trade at this particular moment and a feeling of expectancy pervades everything. With the publication of the order of the I. C. C. on July 26, directing that a certain proportion of coal be shipped to New England via the tide ports, Philadelphia included, much discussion has ensued. There is strong objection to the plan.

While tide shipments for export are not embargoed, yet the strict enforcement of the I. C. C. order amounts to that. Certain it is that export orders, with buyers bidding against each other, have had much to do with the present high prices. Nevertheless concerns with foreign commitments for a definite tonnage at a fixed price, certainly expect to be allowed to fill their obligations. However, it is doubtful whether this business can be handled if the order is strictly enforced.

The price tendency in the local market has had a slight downward trend with the Pennsylvania grades, most of which could be bought during the past seven or eight days from $11.50 to $13 a ton, and it would seem that the price of $15 of the past two weeks was the extreme for the present movement.

The coal from the Fairmont district is now all mine-run, and the prices at the mines recently have been as low as $11.50, but again have quickly moved to $13, to fall back almost as quickly to $12 and $12.50, around which mark the prices now hover. The car supply from all regions is fair to poor.

It is really expected that prices will fall somewhat lower in the next few days, as the belief is that if exports are curtailed to any considerable extent, as seems to be the intent of the I. C. C. order, then the throwing of this extra tonnage into the domestic market can have no other effect.

With slowly improving rail service, there are evidences of a bettering of the stock piles of the utility plants, and some of the industrial concerns are also getting better shipments, particularly those with contracts with the large producers.

BALTIMORE

Priority Orders to Northwest and to New England Cause Much Agitation Here — What Will Priority Customers Pay?—Stoppage of Exports Will Cause Distress—Anthracite Business Here Is at a Standstill.

Bituminous—Thrown entirely on a new basis of trading by the priority orders to the Northwest and to New England, and the halting of the great export loadings from this port, as soon as the present run of coal here is exhausted, fuel men of this section are feeling about for a new basis of business.

With all shipments to this section cut off from mines west of Meyersdale and Grafton; with the Baltimore & Ohio R.R. obligated to care for a considerable part of the 20,000,000 tons of soft coal to be sent to the Northwest on priority (in 100 days); and the same road and other roads entering here ordered to deliver 250,000 tons to be sent to New England monthly on priority, leaders in the trade are beseiging J. W. Howe, Tidewater Commissioner, for interpretations of many angles of the trading as seen from a local view point.

The prospect is none too bright for local distribution that must depend on mines east of Meyersdale and Grafton, with the usual supply to the territory from Somerset region, a greater part of the Fairmont, Upper Potomac and Clearfield fields eliminated.

What will Northwestern and New England customers under priority be willing to pay? At this writing there has been no break in price generally, although quotations are over a wide range.

Pool 10 coal is said to cost $13.50 a net ton f.o.b. mines in a limited quantity only. Add $1.50 to bring it gross and a $2 freight rate, and the price is $17. With handling charges added it means around $18 a gross ton for coal at this point.

Few coal men expect any real adjustment for some time. There is too little transportation for the fuel consuming needs of the country. Meantime the government stops exports, not only hitting a staggering blow to foreign connections but also hitting the Shipping Board and the American merchant marine, which had relied largely upon coal carrying abroad to make a decent showing.

About 60 ships are still tied up here, some 65 per cent or so American, that came for coal and can not get it to take abroad. Many others have already been diverted after big detention losses.

Car supply on the Baltimore & Ohio and Western Maryland had improved somewhat when the embargo on exports and priorities came along. The eastern supply on the two roads is now generally between 60 and 75 per cent. The roads have been instructed to deliver all cars, when supply is short of one hundred per cent, in pro rata fashion.

Coal men here with credits in the pool and who must now load to New England or not at all are wondering how they are to make out if New England does not pay the top prices of the market, as their credits are established on such a basis with their mine-supply sources. This is but one of the many new problems of the hour.

Anthracite—The hard-coal business here is almost at a standstill. Receipts are so light, in view of the effort of the railroads to deliver bituminous coal at needed points, that the local dealers are without supplies. The consumers are demanding coal ordered in the spring and for which they must pay constantly increasing costs.

Lake

CLEVELAND

City Will Appeal to I. C. C. and Possibly to Federal Courts to Insure Fuel Supply — Spot Coal Is Scarce and Prices Rising — Anthracite Moves In More Freely.

Bituminous—A committee has been appointed by the Chamber of Commerce to seek a hearing before the Interstate Commerce Commission in order to obtain assurance that Cleveland's fuel needs will be taken care of adequately. If such reassurance is not forthcoming redress may be sought through the medium of the Federal courts, in the form of a plea for an injunction to prevent the commission from executing the provisions of Order 10. It is stated that operation of plants may be affected and thousands will be without coal next winter if the order is carried out.

Estimates are made that 1,500,000 tons of coal are required by Cleveland, and up to July 1 dealers were receiving coal at only half the normal rate. It is important that Cleveland store coal during the summer, owing to the fact that railroad facilities are sufficient to handle only 700,000 tons between Nov. 1 and April 31.

Spot coal is unavailable in large quantities, although the price range for No. 8 mine-run slack is between $10 and $11. Large operators who have Lake contracts have cut off practically all shipments to retail dealers.

Pocahontas and Anthracite—Retailers are being placed under increasing pressure for deliveries, but with inadequate receipts are unable to meet the demand. Orders are being taken with no guarantee of price or delivery. Owing to the fact that anthracite coal is not affected by the Lake priority order, this fuel is moving to the yards of dealers more freely than Pocahontas, which is extremely scarce. Prices for both anthracite and Pocahontas maintain an upward tendency.

Lake Trade—Mines and railroads started operating under Order 10 this week but it is expected that some time will elapse before the objective of 4,000 cars daily will be brought to the Lake ports. Coal shipments up to July 26

were 5,611,192 tons compared with 12,203,560 tons for the same period one year ago and 10,688,504 tons in 1918.

Retail prices of coal per net ton delivered in Cleveland are:

Anthracite: Egg and grate, $13.50; chestnut and stove, $13.75.

Pocahontas: Shoveled lump, $11.75; mine-run, $10.50.

Domestic Bituminous—West Virginia splint, $11; No. 8, Pittsburgh, $10.50; Millfield lump, $13.50; cannel lump, $14.50.

Steam Coal—No. 6 and No. 8 slack, $10.50@$11; No. 6 and No. 8 mine-run, $10.50@$11; No. 8 3-in. lump, $10.50@$11.

MILWAUKEE

Dealers Gravely Concerned Over Winter's Fuel Supply — Effect of Priority Order Will Not Be Felt for Some Time—Prices Continue Unchanged.

The coal situation continues to be the subject of the deepest concern. Milwaukee's chances of going through the winter without experiencing a serious fuel shortage, despite the priority order in favor of the Northwest, are not promising. The effect of the priority order will not be felt for some time. The dock yards are preparing to operate night and day during the remainder of the season.

Rail receipts received a body blow when the Illinois strike was inaugurated, and there is little coal on tracks. The retail coal trade is almost paralyzed, because of the lack of supplies. Prices continue unchanged.

Receipts thus far this season by Lake foot up 365,000 tons of anthracite and 561,344 tons of soft coal, against 379,660 tons of the former and 1,697,443 tons of the latter during the same period last year.

BUFFALO

Bituminous Situation Changes but Little—Price Regulation Is Desired—Anthracite Demand Is Sharp—Shipments by Lake Continue Good—Coke Advances with Demand.

Bituminous—The situation does not change, further than that some lower-priced coal is now offered by some of the mines. Reports come in of coal at less than $7 at the mines, but such tonnage is not plentiful enough yet to be called a movement.

What the jobbers here want is price regulation. Most of them are decidedly opposed to the high prices and some refuse to handle coal that runs much above $7.

Anthracite—The local demand far exceeds the supply, yet the situation is not alarming, for the distribution is much larger than it sometimes is and the stocks in consumers' cellars are large. The difficulty is that consumers insist on a full winter's supply now. The shippers are engaged in meeting the demand for coal by Lake to the Northwest, which is a real demand and must be satisfied now. The Canadian anthracite consumers and jobbers are in a panicky condition and are here in force.

Shipments by Lake continue good, the amount for the week being 99,000 net tons, of which 35,200 tons cleared for Duluth and Superior, 29,000 tons for Chicago, 9,500 tons for Fort William, 9,000 tons for Marinette, 6,500 tons for Sheboygan, 6,200 tons for Green Bay, 2,800 tons for Marquette and 800 tons for Mackinaw.

Freight rates are 65c. to Chicago, 60c. to Marinette, 55c. to Sheboygan, Green Bay and 50c. to Duluth, Fort William and Marquette.

Coke—The demand for coke and the lack of cars contribute toward a further advance in price. Jobbers are unable to get a supply of 72-hr. for less than $20.50 at the ovens, with 48-hr. furnace at $19 and no low grades offering. The amount wanted is small.

Inland West

CINCINNATI

Ohio Railroads Give Around 80 Per Cent Car Service—Cincinnati Is Well Supplied, but Canning Factories and Threshers Lack Fuel.

Not in months have the railroads, especially in Ohio, been giving as good car service to the coal mines as at present. Many of the lines are giving 85 per cent of full car supply, and the average is 75 to 80 per cent.

Coal for all local purposes outside of Cincinnati proper is short and hard to get, and will not be easier until the Lake orders have been filled. Canning factories and threshers seem to be the worst sufferers under existing conditions.

Cincinnati is well supplied with coal. Several tows of barges arrived in Cincinnati during the past week, and additional coal is expected to arrive by the water route in the latter part.

Cincinnati dealers are not experiencing the trouble that dealers in other parts of the country are forced to cope with. In the main dealers here continue to get all the coal that is ordered. However, there is no smokeless or anthracite to be had.

ST. LOUIS

City Experiences Most Acute Coal Crisis — Mayor Appoints Fuel Committee To Handle Situation.

The suspension of practically all mines in Illinois brought St. Louis face to face with perhaps the most acute coal famine the city has ever experienced. In other years a storage supply was always on hand, but this time a few days' supply was the average.

There was no great change in market prices previous to last week, at the end, but the few mines working since then have raised prices skyhigh.

The situation was such that on July 29 Mayor Kiel appointed a committee of coal men, railroad men and city officials to take over the coal in the St. Louis switching limits and distribute it to the public utilities and essential food and steam consumers.

Some coal is being brought in for railroad use from the southeast and from western Kentucky. This, however, will be distributed by the committee.

No coke is available, but a fairly good supply of gas coal is on hand and in transit.

CHICAGO

Some Operators Grant Increase to Strikers, Operate Plants and Ship Coal to Chicago — Railroads Hold All Coal on Track in and Around the City for Own Use—Small Amounts of Eastern Coal Arrive.

Chicago is better off than the rest of the Middle West when it comes to getting coal in times of strikes. It seems that some operators in Illinois have already reached an agreement with their men and arbitrarily have granted their strikers a satisfactory increase. These people have been producing coal and what coal they have been able to get out they have been forwarding to Chicago. Coal is selling for quite stiff prices as there are people willing to pay anything for fuel providing their plants continue in operation.

The railroads are now holding, for their own use, all coal on track in and about Chicago. Whether or not the situation becomes so serious that the roads will have to confiscate coal in a more wholesale manner, depends entirely upon whether or not the strike is settled early. If the railroads are forced to confiscate the fuel now on their rails, it will mean a shutdown in all manufacturing lines.

Eastern coal continues to come into Chicago in quite small quantities. What coal is coming in is moving at reasonable prices as a number of the retail dealers have contracts on which they are getting some shipments. On open-market coal, ten dollars for smokeless lump is conservative, and the same figures are being obtained for West Virginia and Kentucky domestic coals. What little Illinois coal is being produced and sold is bringing anywhere from $8@$9 on the open market.

MIDWEST REVIEW

Outlaw Coal Strike Brings About Most Serious Situation—Factories Are Closing Down—Joint Conference of Operators and U. M. W. of America Is Called — Public Looks to Washington for Relief.

To say that the situation brought about by the outlaw coal strike in Illinois and Indiana is quite serious, is putting it mildly. Industries are already being affected. Daily reports are now coming in of factories closing down on account of no coal. A number of steps have been taken toward settling this outlaw strike on the part of the day labor at the mines. T. T. Brewster of St. Louis, chairman of the Wage Scale Committee of the Central Competitive Field, has called a meeting of Indiana operators to consider a request for a joint conference with

John L. Lewis, president of the United Mine Workers of America.

Taken all in all the coal industry is in a most unfortunate predicament. What hinders the operators is the fact that when they tried to adjust the matter last November, injunctions were issued against them and some of them are still under indictment.

COLUMBUS

Car Supply and Production Improve, but Prices Do Not Recede—Dealers' Stocks Are Short—Steam Trade Is Also in Bad Shape—Lake Situation Improves Under Priority Ruling.

An improvement in the car supply for Ohio mines, as compared with the previous week is reported and a larger production was the result. But the general public has not benefited by the increased output, as priority orders take the available tonnage to the exclusion of manufacturers and dealers. Prices are ranging as high as ever and little recession in price is expected under present conditions.

The retail trade is still in a strenuous condition, owing to short stocks in the hand of dealers. The available supply is apportioned around where it is most needed.

Retail prices are still ranging high and show considerable irregularity. Hocking lump sells from $9@$10 delivered while mine-run is almost as high. West Virginia splints are selling at $10@$11.50 for lump and about 50c on the ton less for mine-run. Pomeroy Bend and Kentucky grades range from $9.50@$10.50, with lump and mine-run about on a par. Pocahontas is quite scarce and sells for $11@$12 per ton.

The steam trade is also in bad shape, owing to lack of reserves which are causing manufacturers and other large users considerable concern. Active bidding for the small available tonnage is reported in all of the producing fields and as a result prices continue to advance. Comparatively few large users have contracts, as a large number are buying from the open market.

Prices at the mines for the principal coals used in central Ohio are:

Hocking lump	$7.50 to $9.50
Hocking mine-run	7.00 to 9.00
Hocking screenings	7.00 to 8.50
Pomeroy lump	7.75 to 9.75
Pomeroy mine-run	7.50 to 9.50
Pomeroy screenings	7.50 to 9.00
West Virginia splints lump	8.00 to 9.50
West Virginia mine-run	8.00 to 9.25
West Virginia screenings	7.75 to 9.25
Pocahontas lump	8.50 to 10.00
Pocahontas mine-run	8.00 to 10.00

DETROIT

Lake Priority May Curtail Detroit and Michigan Shipments—Poorer and Less Coal Comes to Detroit Than Usual—Anthracite Receipts Are Light—Movement of Lake Coal Increases.

Bituminous—There is a feeling among some of the Detroit jobbers and wholesalers that a curtailment of bituminous shipments into Detroit and Michigan may be a result of the efforts being made to give priority to shipments of Lake coal.

The present movement of coal to Detroit is deficient in quantity and much of it is of a quality that provokes complaint from consumers, who have been accustomed to the use of high-grade coal from West Virginia and Kentucky. But little coal from either of those states is now reaching Detroit except such stock as is being sent forward under contracts closed early in the year.

Mine-run coal from Ohio mines is being quoted at $8.50 to $9.50 per short ton at the mines. About the same price applies to nut, pea and slack, while lump is held at $9 to $9.50. West Virginia mine-run, lump and nut, pea and slack all carry about the same price, or around $9.50 to $10.50 at the mines. Though Pocahontas is practically unobtainable, mine-run of that class is quoted at $10.50.

Anthracite—Some of the retail dealers say they are receiving a somewhat better supply of anthracite than a few weeks ago. In general, however, the volume of shipments falls much short of the market's requirements. Receipts are light and deliveries irregular. Many of the retailers are still unable to begin distribution on orders booked last spring.

Lake Trade—Though a small increase in movement of Lake coal is reported for the first week in which the priority rule was effective, jobbers are informed there has been little increase in car supply at the mines, as yet.

South

LOUISVILLE

Car Supply Is Better and Demand Heavier as Result of Strikes in Other Fields—Railroads Seize Much Coal — Federal Investigations Are Under Way.

The car supply has increased materially during the week as a result of strikes in Illinois, Indiana and West Virginia, which has resulted in better movement of empties into operating fields of Kentucky. At the same time the strikes have thrown an increased demand to the Kentucky fields, and while production is larger prices continue high, and the general situation is about the same.

It is said that action will be taken against operators of Eastern Kentucky on charges of Lever Act violation, brought in the Federal court at Covington, Ky. It is charged that Eastern Kentucky coal is being produced at $1.48@$1.57 a ton, and sold at $7 to $9 a ton.

The general demand for coal is about as keen as ever, and domestic demand is still unfilled, retailers having a dull season. River shipments are holding up well this season, due to good boating stakes in the Ohio River, but prices on river coal are holding along with rail.

Eastern Kentucky prices show that mine-run is selling at $8@$9.50 for Harlan and other gas coals; and non-gas or steam mine-run at $8.75@$9. West Kentucky quoted lump at $5.50 average; mine-run, $4.50@$5.25; screenings, $4.50@$5.

BIRMINGHAM

Stocks Are Low, Demand Strong and Prices Rising — Mines Prorate Output Among Customers — Strikes Affect Domestic Production — Output Gains Over Previous Week.

Coal consumers of every class are quite short on stocks at this time and those not having contracts are receiving little relief or response to their appeals for fuel, as there is little coal to offer. Competitive bidding for such as becomes available from time to time is reported to have boosted prices to figures ranging from $7.75 to $8.50 per net ton mines.

Contract customers are not faring much better, as mines which have tied up practically their anticipated normal output are pro-rating their production against the orders in hand, and deliveries, which have heretofore been held below specifications, have been further reduced in many instances by strikes which have been in effect in the commercial fields. Thus the accumulation of stocks has been impossible.

The railroads are confiscating some coal, but not as much as was being taken over some weeks ago. Domestic production has been the most seriously affected by the strikes in the Cahaba field and receipts have not been sufficient for the past several weeks to more than offset the retail sales.

Equipment is being furnished to adequately care for all mines on the Southern and Frisco lines, but no improvement has been shown in the car supply on the Louisville & Nashville, which remains around 45 per cent.

Canada

TORONTO

Anthracite Is Received in Fair Amount, but Dealers Are Much Behind in Deliveries—Bituminous Does Not Improve and Continues Scarce.

Conditions have shown but little change during the past few weeks. Anthracite is coming forward to a fair extent, but dealers are still much behind in deliveries and do not anticipate receiving larger shipments until the close of navigation cuts off supplies to the upper Lakes.

Consumers are anxious to stock up before the expected advance in prices, owing to the prospective increase in freight rates. There is no noticeable improvement in the situation as regards bituminous, which continues quite scarce, with prospects for a winter supply far from encouraging.

Prices for bituminous are fluctuating with quotations per short ton as follows:

Retail, anthracite, egg, stove, nut and grate	$15.50
Pea	14.00
Bituminous, steam	15.00@$16.00
Domestic lump (nominal)	18.00
Cannel	16.00
Wholesale f. o. b. cars at destination—	
Three-quarter lump	14.00@ 16.00

News From the Coal Fields

Northern Appalachian

FAIRMONT

Monday's Loading Is One of the Record Days of Year for Region—Many Mines Here Are Idle on Saturday—Production Now Will Mainly Go to Lakes, Railroad Fuel and Public Utilities — Demand Is Stiff and Prices Stationary.

In the week ended July 24 there was a greater degree of regularity in the car supply than had obtained the week before. Between 1,500 and 1,600 cars on the Monongah division alone were loaded and shipped on Monday, which proved to be one of the record days of the year. After Monday, the supply was hardly more than 800 cars a day.

There were nearly 100 mines on the Monongah division alone idle on the last day of the week. Conditions on other roads in northern West Virginia were similar to those on the Baltimore & Ohio. About the middle of the week operations at a number of mines on the Monongah division of the Baltimore & Ohio were suspended owing to a freight wreck which prevented distribution of cars for a time.

There was a fairly large tonnage shipped to the Lakes. However, beginning with the last week of July, it was rather anticipated that the bulk of production would be for the Lakes, railroad fuel and public utilities, since the Lake allotment on one division of the B. & O. alone was 130 cars of coal a day. The Monongahela railroad mines were expected to furnish eight cars a day.

With commercial shipments still limited in volume, there was a stiff demand in all markets for northern West Virginia coal reported, prices remaining on about the same level as observed during previous weeks.

CONNELLSVILLE

Spot Market Has Not Advanced, While Demand Exceeds Offerings — Coke Brings Only Coal Value — There Is No Contract Market — Production Is Slightly Heavier.

The spot market for Connellsville coke has not advanced in the past week and possibly it is a shade easier. Requirements are still much in excess of offerings, but prices for some time past have been such that not a few consumers simply would not pay prices asked, and it is the demand of the remainder that has supported the market, at the record prices for the whole history of the Connellsville coke industry.

The coal market is of course a supporting factor, for when a coke operator can ship coal at the market price then he receives fully as much for the coal as he would for the coal turned into coke, making allowance for the bare cost of coking.

There are occasional reports of sales of furnace coke at less than $18, but it is possible that by the time such coke is sold to a consumer the price is $18 or higher. The market in general seems to be quotable at the same level as a week ago: Furnace sells at $18@$18.50; foundry, $19@$19.50, per net ton at ovens, for spot or prompt shipment.

As to contract coke, there is simply no market at all, neither producers nor consumers having any disposition to negotiate. While furnace and foundry coke are quoted in the market at different prices it is alleged in many quarters that there is no distinction, except in price. The distinction of foundry coke being shipped in box cars was lost years ago.

The *Courier* reports production in the Connellsville and Lower Connellsville region in the week ended July 24 at 182,145 tons, an increase of 10,350 tons.

PITTSBURGH

Regions Receive Lake Coal Allotment—Market Shows No Signs of Decline—Car Supplies Perhaps Are Near Coal Miners' Limit.

For the Lake coal pool the Pittsburgh district is assigned 5,000,000 tons, to be shipped in the 100 working days beginning July 26. Ohio No. 8 field comes next with 4,000,000 tons. Even the Connellsville region is given an assignment (800,000 tons) when it is not so many years ago that this region mined scarcely any coal except for its own coking operations. It is claimed there is no dictation of price by the pool management, which exercises its authority by means of the railroads, but there is an impression that coal shipped for the Lake trade, and not coming under contracts previously made, is going to be invoiced at about $5 or $6.

While there are more or less precisely worded reports from Washington, that a secondary priority, next to the Lake priority, is to be accorded coal for New England, yet operators in the Pittsburgh district are not informed as to there being any definite allotments to the district.

The spot market does not come down, being still quotable within the general range of $10@$12 per net ton at mine, Pittsburgh district, for various grades and tonnages, and the feeling is growing among operators that some form of Government control or regulation is bound to come.

Recently there appeared to be strong chances that with increasing production, through there being better car supplies, the market would decline of its own accord; but with so much coal forced out of the situation by the Lake trade, the buying competition for the remainder will be strengthened.

Furthermore, it is quite probable that not a great deal more production can be brought out by increasing car supplies, as with much further increase in car supplies, the limit of what the miners are willing to produce would be uncovered.

Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY

BITUMINOUS COAL.

	1920		1919 (a)	
	Week	Calendar Year to Date	Week	Calendar Year to Date
July 10b	9,659,000	272,019,000	10,225,000	228,324,000
Daily average	1,932,000	1,673,000	1,704,000	1,404,000
July 17b	10,930,000	282,949,000	9,889,000	238,213,000
Daily average	1,822,000	1,678,000	1,648,000	1,413,000
July 24c	10,601,000	293,550,000	9,988,000	248,201,000
Daily average	1,767,000	1,681,000	1,665,000	1,422,000

ANTHRACITE

	1920		1919 (a)	
	Week	Calendar Year to Dage	Week	Calendar Year to Date
July 10	1,500,000	45,141,000	1,849,000	41,898,000
July 17	1,700,000	46,931,000	1,795,000	43,693,000
July 24b	1,767,000	48,698,000	1,803,000	45,496,000

BEEHIVE COKE

United States Total

Week Ended				
July 24 (c) 1920	July 17 (b) 1920	July 26 1919	1920 to Date	1919 to Date
381,000	363,000	371,000	12,012,000	10,813,000

(a) Less one day's production during New Year's week to equalize number of days covered for the two years. (b) Revised from last report. (c) Subject to revision. All figures in net tons.

NORTHERN PAN HANDLE

Car Supply Falls Behind That of Previous Week—Output Goes to Inland West Markets—Order 10 Will Now Send Much of Output to Lakes—Railroads Use Large Percentage of Tonnage.

During the week ended July 24 transportation facilities were worse than those provided during the week ended the seventeenth. There was a loss of approximately 12 per cent, the supply for the week in the field averaging only about 38 per cent. For the previous week it had been maintained at about 50 per cent.

Tidewater shipments were few and far between, the output being largely for inland West markets; railroads, however, using a large part of the output, so that production of commercial fuel was still quite limited.

Compliance with Service Order 10 of the Interstate Commerce Commission will mean that virtually the entire output of northern Pan Handle mines will have to be used in taking care of the Lake situation.

Middle Appalachian

KANAWHA

Output for the Field Is Less Than 50 Per Cent—Promised Cars Have Not Materialized—Embargo Removal Permits Increase in Eastern Shipments.

Kanawha mines suffered from a shortage of cars as July drew to a close, transportation conditions being quite bad. The average for the car supply covering the week was less than 50 per cent. Conditions were equally bad insofar as mines on the Kanawha & Michigan were concerned.

Coal men were rather pessimistic as to the ability of Kanawha mines to take care of the Lake demand and the commercial demand at the same time in view of the limited car supply. A large supply had been promised, in order to enable mines to handle their percentage of the tonnage required by the Lakes. Yet the additional cars had not materialized early in the week which came to an end on July 31.

Eastern shipments from the Kanawha field were somewhat larger owing to the heavier tonnage for tidewater, that being made possible by the removal of an embargo on July 20. The car supply was still limiting production to such an extent as to have no effect on prices.

LOGAN AND THACKER

Production Shows Marked Improvement in Logan Field and Slight Betterment in Thacker Region—Guyan Territory Will Furnish 15 Per Cent of Allotment for Lakes—High Volatile Has Excellent Market.

Rather marked improvement in the Logan high-volatile field in southern West Virginia and a slight improvement in the Thacker field was observed during the week ended July 24. The Logan field is solely dependent upon more cars for an improvement in the production situation, while the Williamson field is handicapped by a strike still in force. There was an excellent market for all the coal produced in the high-volatile regions under discussion.

Production increased from 154,000 to 190,000 (estimated) tons in the Logan field, or a gain of about 21 per cent over the previous week. Western shipments were nearly in the ratio of two to one over eastern shipments, although there was an increased movement to tidewater during the week owing to the lifting of an embargo.

Mines in the Guyan region will be called upon to furnish 15 per cent of their allotment for the Lakes each day during the time Service Order 10 is in effect and that will materially cut down the shipment of commercial fuel to other points unless there is a material increase in the car supply.

The United Mine Workers apparently had made no further headway in their efforts to tie up production in the Williamson field. On the other hand, there was a slight increase in the output, owing to more regular operation at several of the larger plants in the field; the Borderland company at Borderland, W. Va., as well as several other companies having a larger force of men at work.

Operators feel sanguine that with miners who want to work afforded ample protection, the effort of the United Mine Workers to use fear as a means of gaining recruits will not be successful.

POCAHONTAS AND TUG RIVER

Pocahontas Gets 85 and Tug River 100 Per Cent Car Supply—Output Makes Big Increase—Labor Shortages Are Now Evident—Much Pocahontas Coal Is Exported—Tug River Fuel Goes to New England and Some to Lakes.

Strides were made in increasing production in the smokeless regions along the Norfolk & Western, chiefily due to a well maintained car supply on that road. With the growth in the car supply labor shortages were coming more and more into evidence; indeed, losses from a labor shortage being in excess of those from a car shortage. Generally speaking, N. & W. mines had a car supply of about 85 per cent or better. Officials of the Norfolk & Western expected that fully 1,000,000 tons of coal would be handled to the lakes before the close of the lake season, that representing the normal tonnage delivered at lake points from the Norfolk & Western in the course of a season.

Much of the output of the Pocahontas region was consigned to eastern points, some of this tonnage being for export shipment, though shipments of that character are still below the levels reached before the Interstate Commerce Commission began to restrict foreign shipments. After July 26 it was rather anticipated that there would be a marked growth in Lake deliveries in accordance with Service Order 10.

Loading in the Tug River field for the week ended July 24 reached 86,900 net tons on a 100 per cent car supply If miners had worked to a reasonable degree, 30,000 tons more could, and should have been loaded. Continued union agitation and the strike in the Mingo County field is held responsible by operators for the failure of the miners to work better in the Tug River field.

Shipments were heavy to New England during the last two weeks of July and some of the mines in the Tug River field are shipping large tonnages to the Lakes.

VIRGINIA

Virginian Mines Increase Production and Now Labor Shortages Develop as Car Supply Improves—But Little Spot Coal Is Sold.

Mines in the Virginia field increased production, there being a gain of 7,000 tons during the third week of July, although the percentage of full-time capacity was only 73 per cent, as compared with 76 per cent for the week preceding. The potential capacity, however, had been increased in the meantime. However, a labor shortage was beginning to develop as car shortages were cut down.

Not so much coal was converted into coke as had been the case during the previous week, that being the result of the improvement in the car supply.

The production of coal for commercial shipment was still rather limited, however, owing to the large volume of coal utilized by the railroads, that involving the assignment of many cars. As much of the coal shipped was under contract, spot sales were not large in volume.

NEW RIVER AND WINDING GULF

Virginian and C. & O. Smokeless Fields Increase Production—Gulf Works Over Two-Thirds and New River Half Time—Most of Coal Shipped to Tide Is for Coastwise Delivery—Prices Do Not Change.

There was a slight increase in production in the New River and Winding Gulf fields combined for the week ended July 24, yet production was nothing like what it should have been. Tidewater was open to smokeless shipments from both the Gulf and New River districts during the week. However, little of such tonnage was being exported, much of it being for coastwise delivery, especially New England. Prices remained practically unchanged.

Winding Gulf mines supplied by the Virginian Ry. were fully 20 per cent better off than Chesapeake & Ohio mines in the same territory, from a car supply standpoint. The Virginian Ry. operated between four and five days, while the mines on the C. & O. road were able to work only about half the week. A few of the 120-ton cars ordered by the Virginian had begun to arrive in the Gulf field during the week and were pressed into service.

NORTHEAST KENTUCKY

Output Increases in the Region—Local Mines May Exceed Requirements of Order 10—Coal Is Appllied on Contracts.

Not only was there a growth in production in the northeast Kentucky field in the week ended July 24 but it was also apparent that the mines in the region mentioned would succeed in more than meeting the requirements of Service Order 10. Out of a potential capacity of 334,000 tons, the mines produced 151,665 tons, or 45 per cent of capacity.

The proportion of Lake coal as required under Service Order 10 from the northeast Kentucky region was 70 cars daily, or about 8 per cent of the allotment for the mines in the district. The average daily movement to the Lakes during last week was 73.2 cars. It was also observed that several operators were entering the tidewater market, a total of 52 cars having been shipped to tide last week.

The larger and more conservative operators in northeast Kentucky, it is stated, are not participating much in high-priced coal, the majority of the output being applied on contracts.

Southern Appalachian

BIRMINGHAM

Corona Coal Co.'s Petition in Assigned-Car Case Is Dismissed—Matter Must Be Taken Up with I. C. C. for Redress. Field-Day Meet Will Be Revived in Alabama on Aug. 21.

On Aug. 21 a field-day meet will be held in Birmingham, Ala., under the auspices of the Alabama coal operators and U. S. Bureau of Mines, W. B. Plank, engineer in charge of the local station. Numbers of teams from the mines of the district will enter the meet and contest for prizes to be offered, and to wrest the trophy cup from the Alabama Fuel & Iron Co.'s team, which won it at the last meet. These events, formerly held annually, were discontinued during the war, but will be revived beginning this year. Various committees are now arranging the details for the meet and planning to make it a successful and interesting event.

The petition of the Corona Coal Co. asking that the injunction granted the company in the state court against the Southern Ry.'s "assigned car" plan be continued, pending an appeal from the Federal Court's action in dissolving the injunction, was dismissed from Federal Court recently by Judge Henry D. Clayton, who entered a final decree denying the prayers of the plaintiff.

"Continuation of the injunction would encourage other mine operators to seek redress in the State Court," said the opinion. "This would tend to render nugatory the rules of car distribution established by the Interstate Commerce Commission. Plaintiff can apply to the Interstate Commerce Commission for redress."

The Corona Coal Company case is one of great importance in Birmingham industrial circles. The plaintiff contended that cars "assigned" by the railroad company for the use of coal transportation from mines on its lines and mines from which it has contracts for the purchase of coal, should be placed in a common lot with the other cars and distributed equally among all mines, regardless of whether owned by the railroad company, or mines from which they had contracts for the purchase of coal.

TUSCALOOSA

University of Alabama May Secure a New Experiment Station — Dorsey A. Lyon, of Bureau of Mines, Investigates Matter—Operators Much Interested.

Dr. Eugene A. Smith, state geologist of Alabama, recently conferred with Dorsey Lyon of Washington, director of experiment stations of the Bureau of Mines, regarding the claims of the University of Alabama for the establishment of the new experiment station that has been authorized by Congress. While in the South Mr. Lyon will also hear the claims of the universities of Georgia, Tennessee and North Carolina, who also wish the station.

Coal and iron operators are much interested in securing the experiment station for Tuscaloosa, because, located there, it will be quickly accessible for analysis of ores and coals.

The University of Alabama has for many years been doing what it could to locate at the university a Federal mining school, proposed to be established by Congress for each of the states.

Middle Western

KNOX AND PIKE COUNTIES

Coal Companies Start Large Mines in Vicinity of Petersburg and Bicknell, Ind.—Bicknell Is Damaged by Cave-ins.

The Pike County Coal Co. is opening another big mine just north of Petersburg and the railroad is building a switch to the place where the new shaft is to be sunk. West of the city engineers will start a survey shortly to connect the Oatsville coal fields with the railroad. A spur seven miles long will either be built from Petersburg or Glezen to the town of Oatsville, where the Pike County Coal Co. owns more than 10,000 acres of coal land, and where recent tests showed coal seams varying in thickness from 6 to 11 ft.

The American Coal Co., of Bicknell, Ind., is leasing big tracts of coal land both south and north of Petersburg, while the Richards Coal Co. owns thousands of across of coal land in Daviess County. The Globe Coal Co., which is opening a large stripping mine at Rogers, Ind., has uncovered the No. 7 seam and will begin shipping coal shortly.

Eleven houses were damaged in Bicknell recently in probably the largest cave-in of a series occuring there during July. The sinking of the ground was caused by the collapse of old coal mine entries and rooms under the city.

MICHIGAN—OHIO—INDIANA

The M-O-I Association Protests Lake and Assigned-Car Orders of I. C. C.

Secretary B. F. Nigh, of the Michigan-Ohio-Indiana Coal Association, in protest against the recent priority order for 4,000 cars for the Lake trade daily, in addition to the priority for public utilities, has sent the following telegram to the Interstate Commerce Commission:

"The Commission order giving preferential supply of 4,000 cars per day to mines loading Lake coal in addition to the assigned cars for railroad fuel, in my opinion, makes it impossible for householders in Michigan, Ohio and Indiana towns to obtain a sufficient supply of coal to protect themselves against great suffering during the winter. I believe the order violates the constitutional rights of the people in Michigan, Ohio and Indiana territory and it is vicious and without reason. I anticipate taking immediate action legally to enjoin the railroads from enforcing the Lake order and the assigned-car order.

West

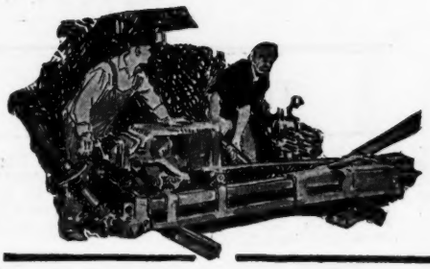
BUHL, IDAHO

Threshing Operations of the District Seriously Affected by Lack of Coal Due to Car Shortage.

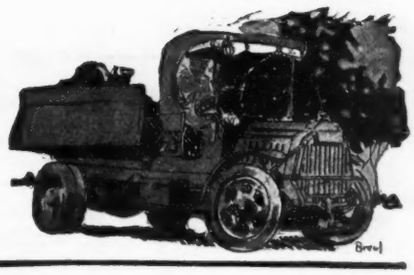
A serious coal shortage confronts the threshermen of the Buhl district, Idaho. There is said to be practically no coal available for the threshing machines. The district affected embraces an area of nearly 100,000 acres, about 50 per cent of which is in grain. The Interstate Commerce Commission has been appealed to by the local chamber of commerce in an effort to rush in an emergency supply of coal before the season commences. Car supply is said to be the principal factor entering into the shortage.

Shipments of Bunker Coal from British Ports

District	June, 1919	June, 1920
Bristol Channel ports	286,893	224,113
Northwestern ports	190,361	130,043
Northeastern ports	155,585	207,474
Humber ports	120,482	149,145
Other east coast ports	106,188	125,556
Other English ports	33,825	72,486
Ports on east coast of Scotland	42,585	65,065
Ports on west coast of Scotland	56,389	98,286
Irish ports	500	253
Total	992,808	1,073,321



Mine and Company News



ILLINOIS

Duquoin—A deal has just been consummated whereby the Aladdin Coal Co., of Pinckneyville, ten miles west of here, becomes the owner of the Little Muddy mine at Tamaroa, operated by the Collier Coal Co. The mine has been operated for 20 years, but still has a large acreage untouched. The transaction included the whole mining property, the coal land and options adjoining the land. E. J. Hartenfeldt, of the Alladin Coal Co., has stated that the output of the mine would be increased over 500 tons within a short time and that a number of new switches and other improvements will be made at the plant immediately to accomodate the increased tonnage. The price involved in the sale of the mine was $65,000.

The Southern Gem Coal Co., has announced the removal of its location formerly planned for the building of a new rescreening and washing plant, from Mt. Vernon to Tamaroa. The town is on the main line of the Illinois Central and the Wabash, Chester & Western railroads, and this is thought by some to have been the reason for locating the plant at that place. According to plans the plant will cost in the neighborhood of $100,000 and will handle coal mined and shipped from all over the southern part of the state. The Southern Gem Coal Co. continues to drill east and south of town and most of the tests have proved that there is a good regular seam through the district.

KENTUCKY

Lexington—The Dudley Coal Co., recently incorporated, has acquired local coal properties with plant, and plans for extensive operations. The company expects to make a number of improvements at the plant and install equipment for a capacity of about 1,500 tons a day. W. S. Dudley and G. P. Morison head the company.

Louisville—W. E. Hicks, mine superintendent for the Louisville Gas & Electric Co.'s mine at Echols, Ky., made a record recovery following the fire which destroyed all the surface buildings on June 16, the first car of coal after the fire moving out in just ten days, and the company getting back to a normal production of 14 cars a day on July 5, using temporary equipment. Thirty feet of the shaft had to be replaced. Tipple, machine shop and all buildings were destroyed. The company will replace with permanent structures, planning to spend $100,000 in re-equipping the plant.

NORTH DAKOTA

Bismarck—The Lucky Strike Coal Co. has completed its organization in Bismarck, it is announced. The company is capitalized at $500,000 and has taken over the mines at Zap, N. D., formerly owned by Slowey and Field, It owns and has under lease 1,700 acres of coal land and will operate one of the largest mines in the State.

The officers and directors of the company are A. L. Farr, of Fargo, president; George M. Slowey, of Beulah, vice president; W. M. Cowan, of Fargo, secretary and treasurer. The company is amply financed and is making extensive developments at the mine, putting in a spur track and side track, a modern tipple, electric machines and a bathhouse for the miners.

W. M. Cowan will be in charge of the general office and J. W. Deemy of Kenmare will be manager of the company, looking after the production end of the business. The list of stockholders contains the names of many prominent men in the State.

OHIO

Kent—J. G. Woodward and J. L. Harris, both of Kent, have acquired the property of the Stellar Coal Co., at Adena, Ohio, including mine equipment, railroad facilities, etc., for a consideration of about $200,000. The new owners plan extensive operations.

Columbus—The Stalter & Essex Coal Co., has been chartered with a capital of $150,000 to operate mines in the Pomeroy Bend district. The incorporators are: Fred Essex, T. J. Frasure, C. J. Maddox, H. L. Allread and J. A. Stalter. The organization of the company has not been completed.

PENNSYLVANIA

Graceton—Announcement is made of the sale of the Graceton coal operations in Indiana County, owned by the Youngstown Steel Co., to Warren Delano and associates of New York city. Mr. Delano is one of the principal owners of the Vinton Colliery Co. of Vintondale, in the same county. The purchase price of the company acquired was not given out. The new owners took possession July 1, but will not start active operations until Sept. 1.

Hooversville—A new coal mining company, incorporated under the laws of Pennsylvania and capitalized at $500,000, with L. M. Ryan of Altoona as the manager of the mining operations, has just been formed, to be known as the Old Colony Coal Mining Co. The operations are located at Hooversville, Somerset County, where the company has extensive holdings.

Pittsburgh—The Eastern Coke Co. has been formed to take over the Tower Hill No. 1 mine of the Tower Hill Connellsville Coke Co. and operate it for the Eastern Steel Co. The entire stock of the Eastern Coke Co. is owned jointly by the Eastern Steel Co. and the Tower Hill Connellsville Coke Co., the majority of the stock of the latter company having recently passed to J. Hart Hillman, Jr., of Pittsburgh, Pa., chairman of the board of directors of the Hillman Coal & Coke Co. The Hillman company will continue to operate the plant, the whole output of which will go to the Eastern Steel Co. The Tower Hill mines are in Fayette County, Pa., near Republic, on the Monongahela R.R.

Uniontown—The H. C. Frick Coke Co. has commenced stripping coal on a tract near Masontown, between its Ronco and Leckrone plant. A huge shovel with a capacity of six cu.yd. and weighing 312 tons has been installed. It will be used to strip the surface after which a smaller shovel will load the coal upon mine cars to be hauled to Ronco for river shipment. It is the first attempt of the Frick company to try out coal stripping. The work will be done under the direction of W. J. Culleton, superintendent of the two plants.

WEST VIRGINIA

Fayetteville—Four companies in the New River field, hertofore operated under individual company ownership and independently of each other, have combined under one ownership and will hereafter be a part of the operations of the newly organized New River Consolidated Coal Co. The mines taken over are those of the Wright Coal & Coke Co., the Batoff Coal Co., the Royal Coal Co. and one other. The companies named are all operating at the mouth of Piney Creek. With a view to increased production, a number of improvements will be made under the new management at large expense.

Charleston—The Cabin Creek branch of the Chesapeake & Ohio Ry. may be extended up Coal Fork, in the sense that others will build the extension if the C. & O. can be induced to operate it. The Shonk Land Co. has a tract of about 6,000 acres on Coal Fork which it is proposed to have developed through leasing to a Cincinnati syndicate, provided it is possible to secure railroad facilities. With this in view representatives of the land company held a conference with representatives of the Chesapeake & Ohio early in July.

Recent Patents

Centrifugal Drier. Guy H. Elmore, Swarthmore, Pa., 1,342,743. June 8, 1920. Filed Aug. 8, 1918. Serial No. 248,911.

Means for Applying Electric Motors to Winding Engines. Alexander Palmros, Syracuse, N. Y., assignor to the Pneumelectric Machine Co., Syracuse, N. Y., 1,342,757. June 8, 1920. Filed July 5, 1919. Serial No. 308,743.

Personals

Leonard G. Sargent, of California, Pa., has resigned from the Engineering and Inspection Department of the Pittsburgh Coal Co., and accepted a position with the Sales Engineering Department of the Fairmont Mining Machinery Co., of Fairmont, W. Va.

G. W. Savage, secretary of the Ohio United Mine Workers, has been appointed the U.. S. delegate to the International Mining Conference, to be opened in Switzerland August 2. While abroad, Mr. Savage expects to thoroughly investigate British mining methods and conditions, including the co-operative store system.

James P. Roe, on May 14, was appointed general superintendent of the Reading Iron Co., at Reading, Pa. Mr. Roe has an international reputation as an engineer and metallurgist. A Welsh boy, many years ago, he served an apprenticeship at the Consett Iron Works in the north of England. Coming to America at the age of 23 he became associated with the Pottstown Iron Co., finally becoming general superintendent of the works. Next he became the general superintendent of the Glasgow Iron Co., which later leased the plants of the Pottstown company. Mr. Roe is the inventor of the Roe mechanical puddler and he now has an opportunity to give his personal attention to the development of this process.

Robert M. Medill, formerly superintendent of a number of mines of the Peabody Coal Co., and later for the Deering interests in southern Illinois, has resigned his position as general superintendent of the Kathleen mine of the Union Colliery Co., at Dowell, Ill. Mr. Medill has not announced what his next position will be. He and his wife will enjoy a motor trip through Michigan, Wisconsin and other northern states before he decides where he will again locate. **D. T. Detweiler,** formerly chief engineer of the mine has been promoted to succeed Mr. Medill.

Homer S. Pratt, vice president of the American Coal & Supply Co., of Chicago, has been elected secretary of the Sunrise Coal Co., operating at Cambria, Ill., Jackson County. He recently purchased an interest in the company.

W. D. Lee has been appointed mine inspector of district 18 with headquarters at Iaeger, McDowell County, according to announcement made by R. M. Lambie, chief of the State Department of Mines. Mr. Lee succeeds **M. E. Quenon,** transferred to district 12 with headquarters at Thurmond, Fayette County, the latter succeeding Edward Nicholson, resigned.

The Pennsylvania State College is conducting a six weeks' summer course in practical coal mining. Among those attending this course of the college's School of Mines are a number of representative men from various mining districts, both anthracite and bituminous. **D. M. Hopkins,** the general outside foreman for the Auchincloss and Loomis collieries of the Delaware, Lackawanna & Western company of the Scranton, Pa., anthracite region, is one of the interested members of the class. Mr. Hopkins states that on account of the conditions due to the presence of explosive gas in large quantities in the section from which he comes many difficult mining problems are presented which are demanding solution. He states that he is already finding the solutions of some of these problems given in the summer course. **T. M. Stonerod,** who is employed by the Shenango Furnace Co. at its Wilpin Coal and Coke plant, a large bituminous operation near Ligonier, Pa., is said to be an enthusiastic member of the class. Mr. Stonerod is of the opinion that many hundreds of the young men of the mining regions of Pennsylvania will avail themselves in the future of the opportunities afforded by this summer course of the School of Mines.

L. Everett White has resigned his position with The Three Forks Coal Co., at Three Forks, W. Va., and has accepted a position with the Deegans-Eagle Coal Co. as chief engineer. Mr. White will look after all of the Deegans interests in the Logan field, which includes the Paragon Colliery Co., the Cub Fork Coal Co., the Orville Mining Co., the Faulkner Coal Co., and the Guyan Valley Coal Co. Mr. White is the son of J. F. White, the State mine inspector for the Guyan field.

J. F. McGee was quite recently appointed State Fuel Commissioner by Governor J. A. A. Burnquist to represent Minnesota in movements to insure the state an adequate supply of coal for the coming winter. Mr. McGee will leave for Washington at once to confer with the Interstate Commerce Commission. He was State Fuel Administrator during the war and is now a member of the State Public Safety Commission.

"Commissioner McGee will represent the state, to the extent of my authority, toward getting coal here," said Governor Burnquist.

The Pennsylvania Coal Dealers' Association recently elected **Samuel B. Crowell,** Philadelphia, president, and **Walter Z. Montgomery,** Harrisburg, vice-president The next meeting will be held in Harrisburg, Pa.

J. H. Brown, of Ashland, Ky., has resigned as assistant State Mine Inspector, effective July 1.

Association Activities

Southern West Virginia

In line with a suggestion made by the U. S. District Attorney, operators of southern West Virginia met in Charleston on Thursday, July 8, to find a way, if possible, to curb and discourage high prices of coal. Operators of the Logan, Kanawha, New River and Winding Gulf districts were represented at the meeting. The discussion covered a wide range in connection with prices on coal, legal phases of the price problem receiving special consideration.

The operators did not make any agreement as to the price of coal, as that was considered to be a violation of the anti-trust laws. But a part of those in attendance at the meeting did join in adopting a resolution recommending that the maximum price for run-of-mine coal at the tipple be $4.59 per net ton; for lump end egg coal $5 per ton and for export coal $6 per ton.

Investigation made of prices in West Virginia disclosed the fact that much of the output of mines, and especially the larger mines, was put under contract some time ago (soon after April 1) at from $3.50 to $5 a ton. Of course prevailing prices for spot coal are twice $5 a ton generally speaking, yet there is little coal to be had at that figure, so that the price represents little except in isolated cases. Reliable companies are adhering to their contracts and making deliveries under contract prices insofar as the limited car supply will allow.

Mercer County Coal Mining Institute

The Mercer County Coal Mining Institute held its monthly meeting at Matoaka, W. Va., recently. While the attendance was not satisfactory a full membership is expected at the next meeting. The membership of this institute numbers about seventy-five.

It was formed with the intention to educate and broaden out the knowledge of all workmen in and around the mines. It is said that the majority of men who have obtained certificates through the mine department to manage mines, seem to think they have attained all that is required of them to safely fill this position.

Granted this, the institute states that there is still a great deal mining men are lacking in knowledge, and if through these institutes members could discuss problems that they come in contact with every day in the mines, better results would be attained. The fatal accidents in the southern end of West Virginia would be reduced greatly.

The next meeting of the institute will be held at Matoaka the first Saturday in August, at 8 p.m. Dr. Clements will read a paper on sanitation and first aid. Inspector Thomas Stockdale will give a talk on the construction of the safety lamp and its use. He will also give a list of practical questions on coal mining, the answers to be prepared for the September meeting. A full discussion is invited.

Trade Catalogs

Light Railway Equipment. The Light Railway Equipment Co., Inc., Philadelphia, Pa. Catalogue 200. Pp. 60; 8½ x 11 in.; illustrated. Catalogue shows equipment for permanent and portable railways, including cars and locomotives.

"Shelby" Seamless Steel Tubes and Their Making. The National Tube Co., Pittsburgh, Pa. Bulletin. Pp. 69; 8½ x 11 in.; illustrated. Description of the various processes of making seamless tubes in the National works. Accounts of tests are given and facts of interest to those using tubes.

Bearings and Their Lubrication. Vacuum Oil Co., New York, N. Y. Bulletin. Pp. 31; 9 x 11¼ in.; illustrated. Various types of bearings are noted and their lubrication commented upon.

Portable Conveyors. Portable Machinery Co., Passaic, N. J. Catalogue. Pp. 24; 6¼ x 9¼ in.; illustrated. Notes money-saving features of certain machinery for storing, reclaiming, loading and unloading loose material such as coal, coke, etc.

Radiagraph. Davis-Bournonville Co., Jersey City, N. J. Bulletin. Pp. 8; 8½ x 11 in.; illustrated. Description of a tool for cutting steel plates and billets in fabricating plants, steel mills, boiler shops, etc., with the oxy-acetylene and oxyhydrogen torch.

Strong and Simple Coaling Plant Equipment Thoroughly Proven. The Roberts & Schaefer Co., Chicago, Ill. Bulletin 38. Pp. 6; 8½ x 11 in.; illustrated. A description of modern mechanical equipment for the handling of locomotive coal.

W.-S.-M. Car Dumpers. The Wellman-Seaver-Morgan Co., Cleveland, Ohio. Bulletin 49. Pp. 15; 8½ x 11 in.; illustrated. Description of coal car dumping plants at terminals and plants.

W.-S.-M. Coal and Ore Handling Machinery. The Wellman - Seaver - Morgan Co., Cleveland, Ohio. Bulletin 41. Pp. 48; 8½ x 11 in.; illustrated. Description of several types of extensive equipment for unloading open-top cars and for handling coal and ore at terminals and large plants.

Extension to L Street Station, Boston. By Charles H. Bromley. Distributed by the Cutler-Hammer Manufacturing Co., Milwaukee, Wis. Pp. 4; 8½ x 11 in.; illustrated. Relates how Boston uses the Dean control for the operation of gate valves.

Coming Meetings

American Mining Congress will hold its annual meeting at Denver, Col., Nov. 15. Secretary, J. F. Callbreath, Munsey Building, Washington, D. C.

American Institute of Mining & Metallurgical Engineers will hold its fall meeting Aug. 20 to Sept. 3. It is proposed to leave Buffalo by steamer and cruise through the Lakes, the first stop being at Houghton, Mich., after which the party will visit Duluth and the Iron Ranges of Minnesota, spending a day or two in Minneapolis on its return. Secretary, Bradley Stoughton, 29 West 38th St., New York City.

New York State Coal Merchants' Association will hold its annual meeting Sept. 9, 10 and 11 at Richfield Springs, N. Y. Treasurer, G. W. F. Woodside, Albany, N. Y.

Illinois and Wisconsin Retail Coal Dealers' Association's annual meeting Aug. 4 and 5 at Milwaukee, Wis. Secretary, I. L. Runyan, Chicago, Ill.

The Rocky Mountain Coal Mining Institute, in conjunction with the Colorado Metal Mining Association, the local chapters of the American Mining Congress and the American Institute of Mining & Metallurgical Engineers, and the International First Aid Meet will hold its annual meeting Sept. 9, 10 and 11 at Denver, Col. Secretary, F. W. Whiteside, Denver, Col.

National Safety Council will hold its 1920 congress on Sept. 27 to Oct. 1, inclusive, at Milwaukee, Wis. General Manager C. W. Price, Chicago, Ill.

Oklahoma Coal Operators' Association will hold its annual meeting Sept. 14 at McAlester, Okla. Secretary, F. F. La Grave, McAlester, Okla.